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THE CLARENDON READERS

IN

LITERATURE

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& SCIENCE

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EDITED BY

J. C. SMITH

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BOOK I

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## P R E F A C E

Good judges have more than once complained to me of the small progress that pupils seem to make in English between twelve and fifteen. Some of them roundly assert that such progress as is made in these years is merely quantitative ; that at the end of them the pupils write more but write no better, have read more but gone no deeper. These critics exaggerate ; but they exaggerate a truth.

How far this state of things is due to the general decay of Biblical and Classical studies I cannot here inquire. This series seeks to deal with another and a remediable cause—the premature abandonment of the Class Reader. In the Preparatory School the Reader supplies a solid core to the instruction in English : thereafter it is now the fashion to put it aside and trust wholly to continuous reading. That plan no doubt makes reading more pleasurable, and gives many pupils a liking for it. And this is much. But the increase in pleasure is not accompanied by a corresponding increase in power. The pupils are apt to be satisfied with vague general impressions ; they do not learn to grapple with English at close quarters and wring the full meaning out of it. English is not an easy language. Of course, there is plenty of easy reading in English for those who are content to saunter on its lower slopes. But to reach its peaks we must climb.

Moreover, ‘continuous reading’ generally means imaginative literature, *i.e.* verse or prose fiction : if other

forms are admitted they are admitted primarily on grounds of style. Now there are many boys, and some girls, who do not greatly care for imaginative literature, and yet are not only clever about *things* but will read eagerly about their hobbies and even master a formidable technical vocabulary in pursuit of them. It is a stingy and pedantic provision of literature that will not cater for the appetite for facts. It would be equally pedantic, of course, to exclude imaginative literature altogether from a series like this, and I have not done so ; but I have chosen to represent it mainly by those world-famous stories which have entered, as it were, into the very tissues of European Literature—stories like the Tale of Troy and the Arthurian Legends. Modern fiction will take care of itself ; and for lyric poetry there are many good anthologies.

Finally, even in the earlier teens, new vistas begin to open out : boys and girls begin to reflect, to be interested in questions of conduct and the inner life, to ask ‘ what it is all about.’ I have not hesitated to include some extracts that bear on these things.

Such is the purpose of this series, and such have been the principles of selection. The arrangement of matter in the several books explains itself. I have added brief notes where notes seemed indispensable ; and I have glossed foreign or archaic words ; but for current English words the dictionary should be used. One of the chief things that pupils have to learn at this age is how to use a dictionary.

I desire to thank the many friends who have helped me, and in particular, Mr. J. R. Cameron, Mr. J. T. Ewen, Mr. C. E. L. Hammond, and Mr. C. F. A. Pantin.

J. C. SMITH.



# CONTENTS

## I

THE TALE OF TROY—				PAGE
The Judgement of Paris -	-	<i>Adapted</i> -	-	1
The Rape of Helen -	-	<i>Adapted</i> -	-	3
Hector and Andromache -	-	<i>Adapted from Homer</i>		6
The Death of Patroclus -	-	” ” ”		11
The Fight with the River -	-	” ” ”		14
The Death of Hector -	-	” ” ”		17
The Fall of Troy -	-	<i>Adapted from Virgil</i>		22
THE TALE OF TROY IN ENGLISH -	-	<i>Various</i> -	-	28

## II

AGINCOURT -	-	-	-	-	<i>Ralph Holinshed</i> -	33
<i>Agincourt</i> -	-	-	-	-	<i>Michael Drayton</i> -	38
END OF THE MIDDLE AGES -	-	-	-	-	<i>J. A. Froude</i> -	42
FLODDEN -	-	-	-	-	<i>Sir Walter Scott</i> -	43
<i>Last Stand of the Scots at Flodden</i> -	-	-	-	-	<i>Sir Walter Scott</i>	47
MARTYRDOM OF RIDLEY AND LATIMER -	-	-	-	-	<i>J. A. Froude</i> -	50
DEATH OF SIR PHILIP SIDNEY -	-	-	-	-	<i>Fulke Greville</i> -	54
<i>Elegy on Sir Philip Sidney</i> -	-	-	-	-	<i>Matthew Royton</i> -	60
QUEEN ELIZABETH'S SPEECH AT						
'TILBURY -	-	-	-	-	<i>Queen Elizabeth</i> -	61
END OF THE ARMADA -	-	-	-	-	<i>J. A. Froude</i> -	62
<i>The Armada</i> -	-	-	-	-	<i>A. C. Swinburne</i> -	68
LAST FIGHT OF THE 'REVENGE' -	-	-	-	-	<i>Sir Walter Raleigh</i> -	69

	PAGE
CHARACTER OF JAMES I - - - <i>Sir Walter Scott</i> -	74
<i>Naseby</i> - - - - <i>Lord Macaulay</i> -	77
CHARLES I'S SPEECH ON THE	
SCAFFOLD - - - - <i>John Beresford</i> -	80
<i>To the Lord General Cromwell</i> - <i>John Milton</i> -	86
CROMWELL - - - - <i>Lord Clarendon</i> -	87
<i>Horatian Ode on Cromwell</i> - <i>Andrew Marvell</i> -	89
CROMWELL - - - - <i>Abraham Cowley</i> -	93
LANDING OF CHARLES II - - <i>Samuel Pepys</i> -	94
LANDING OF CHARLES II - - <i>G. M. Trevelyan</i> -	96
THE GREAT PLAGUE - - - <i>Daniel Defoe</i> -	97
THE GREAT FIRE - - - <i>John Evelyn</i> -	98
CHARACTER OF CHARLES II - - <i>Bishop Burnet</i> -	107
<i>Epitaph on Charles II</i> - - <i>Earl of Rochester</i> -	110
THE BURIAL OF MONMOUTH - <i>Lord Macaulay</i> -	111
CHARACTER OF JAMES II - - <i>Bishop Burnet</i> -	112
JAMES II AS ADMINISTRATOR - <i>Hon. J. W. Fortescue</i>	114

## III

BARBARA S—— - - - <i>Charles Lamb</i> -	115
GREEN BREEKS - - - <i>Sir Walter Scott</i> -	119
DEFENCE OF EL CARMEN - - <i>W. H. Hudson</i> -	123
THE RED THREAD OF HONOUR - <i>F. W. Robertson</i> -	126
THE LOSS OF THE 'CLEOPATRA' - <i>From The Spectator,</i>	
1890 - - -	128
<i>The Loss of the ' Birkenhead ' -</i> <i>Sir Francis E. H.</i>	
<i>Doyle</i> - - -	129
DEATH OF CAPTAIN OATES - - <i>Robert F. Scott and</i>	
<i>Charles Turley</i> -	131
AT THE INTERPRETER'S HOUSE - <i>John Bunyan</i> -	136
MR. VALIANT-FOR-TRUTH - - <i>John Bunyan</i> -	137
THE VALLEY OF HUMILIATION - <i>John Bunyan</i> -	140
A CHILD'S VISION OF THE WORLD - <i>Thomas Traherne</i> -	142
<i>The Retreat</i> - - - - <i>Henry Vaughan</i> -	144

## IV

THE WANDERINGS OF ODYSSEUS—	PAGE
The Lotus-Eaters - - - <i>Adapted from Homer</i>	146
The Cyclops - - - - - " " "	147
Aeolus, Circe - - - - - " " "	158
Hades, Scylla - - - - - " " "	157
Nausicaa - - - - - " " "	161
The Return of Odysseus - - - " " "	165
<i>The Lotus-Eaters</i> - - - - - <i>Lord Tennyson</i> -	170
FIRST CIRCUMNAVIGATION OF AFRICA <i>Herodotus</i> - -	171
ST. PAUL'S VOYAGE TO MALTA - <i>Acts of the Apostles</i>	173
THE NORSE DISCOVERY OF AMERICA <i>Lord Dufferin</i> -	177
COLUMBUS DISCOVERS AMERICA - <i>William Robertson</i> -	180
<i>Othello's Wooing</i> - - - - - <i>William Shakespeare</i>	192
THE TAKING OF THE 'CACAFUEGO' <i>J. A. Froude</i> - -	193
DRAKE CIRCUMNAVIGATES THE GLOBE - - - - - <i>Thomas Fuller</i> -	197
SIR HUMPHREY GILBERT'S LAST VOYAGE - - - - - <i>Richard Hakluyt</i> -	200
<i>Sir Humphrey Gilbert</i> - - - - - <i>H. W. Longfellow</i> -	203

## V

SUMMER AND WINTER IN THE TUNDRA - - - - -	<i>Henry Seebohm</i> -	205
A TROPICAL RIVER - - - - -	<i>Charles Kingsley</i> -	208
THE LOWER CONGO - - - - -	<i>Sir H. H. Johnston</i> -	211
THE SLOTH - - - - -	<i>Charles Waterton</i> -	212
THE LEVIATHAN - - - - -	<i>Book of Job</i> -	221
THE NATURE OF CROCODILES - - - - -	<i>Herodotus</i> -	222
RIDING ON AN ALLIGATOR - - - - -	<i>Charles Waterton</i> -	224
GIANT TORTOISES - - - - -	<i>Herman Melville</i> -	228
THE MAGPIE AND THE EEL - - - - -	<i>Anonymous</i> -	231
THE HISTORY OF THE EEL - - - - -	<i>J. T. Cunningham</i> -	233
MIGRATION OF THE LEMMINGS - - - - -	<i>Sir W. H. Flower and R. Lydekker</i> -	241

	PAGE
A VISIT TO THE ZOO - - - <i>W. M. Thackeray</i> -	243
SEA-BIRDS IN THE DESERT - - - <i>C. M. Doughty</i> -	245
<i>A Visit from the Sea</i> - - - <i>R. L. Stevenson</i> -	246
A FAITHFUL DOG - - - <i>W. H. Hudson</i> -	246
<i>Fidelity</i> - - - - <i>William Wordsworth</i>	247
NATURAL AFFECTION IN ANIMALS <i>Gilbert White</i> - -	250
MOTHER-LOVE - - - - <i>Ivan Tourgénéieff</i> -	252

## VI

HOW ARCHIMEDES MEASURED THE CROWN - - - - - <i>Adapted</i> - - -	254
HOW ERATOSTHENES MEASURED THE EARTH - - - - - <i>Sir Halford Mackinder</i>	258
HOW FRANKLIN DREW LIGHTNING FROM THE CLOUDS - - - - <i>G. Hartwig</i> - - -	263
GALILEO, FOUNDER OF EXPERI- MENTAL SCIENCE - - - - <i>Ivor B. Hart</i> - - -	265
<i>The Stars at Night</i> - - - - <i>Blanco White</i> - - -	274
THE SOLAR SYSTEM - - - - <i>Sir Robert Ball</i> - - -	274
SPINNING TOPS - - - - <i>V. E. Johnson</i> - - -	280
BOOMERANGS - - - - <i>V. E. Johnson</i> - - -	286
CHEMICAL HISTORY OF A CANDLE <i>Michael Faraday</i> - -	290
SODA-WATER - - - - <i>Edwin E. Slosson</i> - - -	293
ICEBERGS - - - - <i>Sir A. Geikie</i> - - -	299

# LIST OF ILLUSTRATIONS

	PAGE
A Greek Ship. From a Vase - - - - -	5
A Centaur. A statue found in 1736 in Hadrian's villa at Tivoli (Conservatori Museum, Rome) - - -	7
A Greek Soldier. A bronze statuette dedicated in grati- tude by a soldier at the shrine of Zeus, Dodona -	11
Hermes the Messenger-God. From the shop-sign of a shoemaker at Pompeii - - - - -	21
The Sack of Troy. From a Greek wine-bowl. Furtwängler- Reichhold <i>Griechische Vasenmalerei</i> , F. Bruckmann, A-G., München - - - - -	25
The Martyrs' Memorial erected in St. Giles' Street, Ox- ford, in 1841 - - - - -	51
Sir Philip Sidney - - - - -	55
The 'Black Piness' in which Sir Philip Sidney's body was carried to England. From the copper plate by Derick Theodor de Brijon, 1587. The Trustees of the British Museum - - - - -	59
'The Invincible Armado in 88.' From Carleton, <i>A Thank- full Remembrance</i> , 1627 - - - - -	63
The Armada Medal. On one side the Latin inscription means, 'Not injured but shattered,' and on the other 'God blew and they were scattered' - - -	63
A Ship of the Time, <i>The Primrose</i> of London, 1585. From the title page of Humphrey Mote - - - -	71
Charles I. From the portrait by Daniel Mytens in the National Portrait Gallery - - - - -	81

Oliver Cromwell. From the miniature by Samuel Cooper belonging to the Duke of Buccleuch, K.G. - - -	87
Old St. Paul's. From Visscher's View of London, 1616 -	101
Charles II. From a medal. Trustees of the British Museum	109
Antarctic Conditions - - - - -	133
John Bunyan. From the portrait in the National Portrait Gallery - - - - -	139
The Home of Aeolus. Photograph, Interguglielmi - -	153
Odysseus passing the Sirens. From a vase of the early fifth century B.C. British Museum. Furtwängler and Reichhold, <i>Griechische Vasenmalerei</i> - - -	159
The Site of the Castle of Odysseus - - - - -	167
Columbus discovers America. From a woodcut of 1494 -	191
Francis Drake - - - - -	195
Humphrey Gilbert - - - - -	201
The Siberian Tundra. Reindeer drinking at a stream -	207
The Three-toed Sloth. From a specimen in the Royal Scottish Museum - - - - -	213
The Screw of Archimedes - - - - -	257
Obelisks at Syene and Alexandria - - - - -	261
Map of Egypt - - - - -	262
Galileo Galilei. Bodleian Library - - - - -	267
The Leaning Tower, Pisa - - - - -	269
Colour Disc and Helicopter - - - - -	281
Icebergs of the Southern Seas. Mount Erebus with its glaciers and moraines in the background - - -	301

# I

## THE TALE OF TROY

### (1) *The Judgement of Paris*

THREE thousand years ago, on the banks of the Hellespont, which now we call the Dardanelles, there stood the great city of Troy. From its citadel King Priam ruled in peace and prosperity over the wide plain through which the rivers Simois and Scamander flow down from Mount Ida to the sea. Ships paid toll to him as they passed up the Hellespont : many Asian cities did him homage ; and he had many sons and daughters.

Now his queen Hecuba was about to bear him another child. In the night before she should be delivered she dreamed a dream. She dreamed that she brought forth a firebrand, which set all the palace aflame. In the morning the soothsayers were summoned to interpret her dream, and this was their interpretation of it : that the child which she was about to bear would bring ruin on Troy ; and they counselled that it should not be suffered to live. As soon therefore as the child was born they took it, and, wrapping it in a royal mantle, they carried it far up into Mount Ida behind the city, and there left it to perish. But before nightfall, when wolves and bears begin to prey, a shepherd found the child still living. He carried it home to his wife, and they being childless reared the boy as their own, and called his

name Paris. The boy throve, and grew up to be the most beautiful youth in all the earth ; yes, the fame of his beauty went up to Heaven.

When Paris was come to manhood, there was a wedding in Heaven.<sup>1</sup> All the gods were bidden to it, and all the goddesses, save only the goddess of Discord, whom the others so hated for her continual quarrelling that they would not have her called to the marriage. In her rage and spite she came to the door of the banqueting hall where the wedding feast was spread, and threw among the guests a golden apple, on which were inscribed these words—‘For the Fairest.’ Straightway three goddesses claimed the apple—Hera herself, the queen of Heaven, and Pallas Athene the wise, and the queen of love, golden Aphrodite. Then had there been war in Heaven ; but Zeus to stint the strife commanded that the decision should be left to the judgement of Paris ; for

<sup>1</sup> NOTE ON THE GODS OF GREECE. To understand what follows, one must know what the ancient Greeks thought of Heaven. They believed that there were many gods and goddesses. In the beginning, they said, were Uranus and Gē, that is to say the heaven and the earth, from whom came Cronus and Rhea and the brood of the Titans. But in process of time Zeus, the son of Cronus, dethroned his father, and reigned in his stead as King of Heaven, lord of the sky, wielding the thunderbolt. Next to him in glory and power were his queen Hera ; and his brothers Poseidon and Hades, lords of the sea and of the dark underworld where the dead abide ; and his sister the corn-goddess Demeter. These were the brothers and sisters of Zeus. There were also his children Apollo and Artemis, who ruled the sun and the moon ; and the war-god Ares, and the fire-god Hephaestus, and the messenger Hermes ; and Pallas Athene, the goddess of wisdom ; and Aphrodite, the queen of love and beauty. There were others besides, like the wine-god Bacchus, and demi-gods like Heracles who were raised to Heaven after death ; but these twelve that I have named were the chief, and were known as such to Homer. They dwelt on the summit of Mount Olympus in the sunny air above the clouds, feasting on nectar and ambrosia. They had the shapes of men and women, but taller and more fair ; and they could not die nor grow old. Such were the gods of Greece.



who could judge better of beauty than he who was himself the most beautiful of living men? So to Paris in Ida the goddesses came, where they found him tending his sheep. They stood before him in all their beauty, and he took the apple in his hand. But none of the three, it should seem, would trust to her beauty alone, for each tried to bribe the arbiter. 'Give me the apple,' said Hera, 'and I will give you power.' 'Give me the apple,' said Pallas, 'and I will give you wisdom.' But the laughter-loving Aphrodite came behind him and whispered, 'Give the apple to me, and I will give you the fairest bride on earth.' So he gave the apple to Aphrodite; but the others departed sore displeased.

Not long after this there were great games held in Troy, and Paris went down from his mountain to compete. In running, in throwing the quoit, and in hurling the javelin, he vanquished all rivals; only in wrestling he was no match for the great Prince Hector, Priam's eldest son. The Queen's heart was strangely stirred as she watched this shepherd lad, so beautiful and swift and strong. When the games were over she called him to her and questioned him of his parentage, and he told her all he knew. Then she sent for his foster-father, and the old shepherd came down from Mount Ida carrying the mantle in which he had found the child wrapped. When Hecuba saw that mantle she recognized it, and knew that Paris was her own son. So he was brought home to the palace of King Priam with rejoicing, and from a shepherd lad became a prince of Troy.

### (2) *The Rape of Helen*

When Paris saw the beautiful wives of his new-found brothers, he remembered the promise of Aphrodite that

he himself should have the fairest bride on earth. The fairest of living women, men said, was the Greek queen Helen, the wife of Menelaus of Sparta ; the fame of her beauty reached even to Troy. So Paris took ship and sailed for Sparta. He found Helen fairer even than fame had told, ' Fairer,' says the poet,

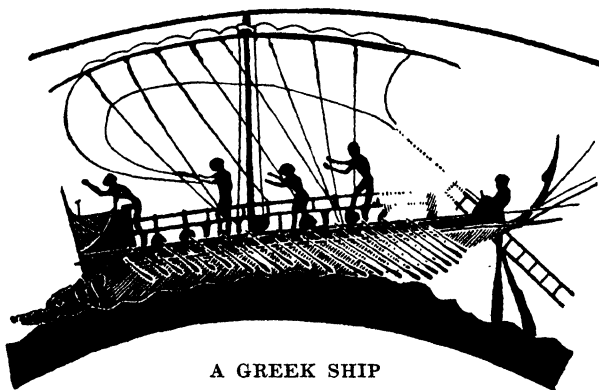
' than the evening air,  
Clad in the beauty of a thousand stars.'

In her lord's absence he wooed her, till she fled with him beyond the sea.

When Menelaus came home to find that his wife had fled, he cried for vengeance to his brother Agamemnon, King of Mycenae, the mightiest of all the kings in Greece, and Agamemnon called the neighbour kings to his aid. From the mainland and the islands they came, to help in punishing the Trojans. There was the hoary Nestor, who had seen a hundred winters ; and the fierce Diomedes, and the gigantic Ajax ; and from his little island-kingdom of Ithaca came the crafty Odysseus, the master of wiles. At first, indeed, Odysseus had no mind to go. He would fain have stayed at home with his young wife and infant son. When he learned that Agamemnon's heralds were at hand, he feigned madness ; he yoked an ox and an ass together and proceeded to plough the sand on the sea-shore. But the heralds were as crafty as he. They took his infant son and laid him in the path of the ploughshare : Odysseus turned the plough aside to avoid the child ; and so his ruse was discovered and he was forced to go. But of all the chiefs who came at Agamemnon's call there was none to match Achilles, the

Sparta] in the Peloponnese, now called the Morea.  
Mycenae] also in the Morea.

prince of the Myrmidons. His father the king was a mortal man ; but his mother was the sea-goddess Thetis. While he was yet an infant she had dipped him in the waters of Styx, which is one of the five rivers of Hell, and thereby made his flesh invulnerable, all but the heel by which she held him. The centaur Chiron had



A GREEK SHIP

trained him in all knightly arts ; and now he was the swiftest and strongest and fiercest of all the Greek warriors—a matchless champion.

The Greek fleet then gathered at Aulis to the number of seven hundred ships. But while it was mustering some of the chiefs went hunting in the woods near Aulis, and unwittingly killed a hind that was sacred to Artemis. The wrath of the goddess was kindled at this sacrilege, and she made the winds blow contrary, so that the fleet could not set sail. For many days it lay weather-bound in Aulis, till famine threatened the host. At length the

centaur] a mythical creature, half man half horse.

Aulis] opposite Euboea, which is now called Negropont.

diviners discovered the cause, and told Agamemnon that he might never hope to sail for Troy till he had appeased the goddess by sacrificing to her the thing that he held dearest. In all the world there was nothing so dear to Agamemnon as his daughter Iphigeneia, whom he had left at home with her mother. But there was no escape. So Agamemnon sent to his wife Clytemnestra, bidding her bring Iphigeneia to Aulis to be married to Achilles before the fleet sailed. But when Iphigeneia came to Aulis, robed in saffron like a bride, solemn priests received her from her chariot, and led her gagged and bound to the altar of Artemis. The kings of Greece stood by watching with pitiless eyes the maiden who had sung to them in her father's halls. Agamemnon hid his face. And there on the altar of sacrifice she was wedded to the bridegroom Death. Thus the wrath of Artemis was appeased, and she caused a fair wind to blow ; and the great armada sailed away to Troy. But Clytemnestra returned home alone with vengeance in her heart.

### (3) *Hector and Andromache*

Long ere this, word had reached King Priam of the foes who were mustering against him. He too had called to his allies, and from many an Asian city they came to his aid. But more than on allies he relied on the stout burghers of Troy, and above all on his fifty bold sons. Since he was himself stricken in years, he gave the command of the host to his eldest son Hector, the bravest of all the Trojan champions. Next to Hector in prowess was the Dardan prince Aeneas, whose mother was the goddess Aphrodite. The Trojans then manned their walls and stood on their defence.

By this time the Greeks had disembarked in Troyland.



A CENTAUR

Beaching their galleys, they built themselves huts along the strand, and sat down to besiege the city. For nine years the siege went on. The Greeks penned the Trojans within their walls, and ravaged all the country round ; but the town itself they could not take. In the tenth year of the war a fierce quarrel broke out between Agamemnon and Achilles. Agamemnon had taken away from Achilles a captive maiden whom the host had allotted to him for his prize. High in rage Achilles withdrew to his hut, and swore that he and his Myrmidons would fight no more. Emboldened, it may be, by this intelligence, Hector next day drew out his troops before the town as if to offer battle in the open. But before the battle was joined, he had a better thought. Grasping his spear by the middle, he thrust the ranks back, and called to Agamemnon for a truce. Then, advancing between the hosts, he said, ‘ Lord Agamemnon, why should guiltless men still perish ? Let your brother and mine fight it out between them ; the quarrel is theirs ; let them try the battle. And let the victor take Helen, that so the war may cease.’ Agamemnon assented, the hosts were halted, and Paris and Menelaus encountered between the lines, to try the issue in single combat. Menelaus had the better in the duel, and seizing Paris by his helmet’s crest he began to drag him toward the Greek lines. But when Aphrodite saw her favourite vanquished she flew to his rescue unseen ; she broke the cheek-strap of the helmet and snatched him away in a cloud. Menelaus looked round to find his enemy gone, and only the empty helmet in his hand. Furiously he hurled it from him, and stormed across the battle-ground, shouting for his vanished foe. In the Trojan ranks was one Pandarus, a famous archer, who

stood watching the combat with his bent bow in his hand. At that moment some god put an evil thought in his mind—to slay Menelaus and win favour from the son of Priam. He drew his arrow to the head and let it fly. It wounded Menelaus, though not mortally. And thus by a Trojan's treachery the truce was broken, and the battle at once became general.

In the fighting that ensued Diomedes, aided by Pallas Athene, charged so fiercely into the Trojan ranks and slew so many of their bravest, that Hector at length went up into the city and begged his mother the Queen to supplicate Pallas with prayers and offerings that she might cease from aiding Diomedes. This done, he crossed to his own palace, in hope to see his wife and child. But she, when she heard that battle was joined, had run to the walls fearful of her husband's safety. So Hector turned again and strode down the high street to rejoin the fray. His long shield clanked on his back, covering him from neck to ankle : the horse-hair plume tossed on his helm ; and in his hand he bore a spear twelve cubits long—the spear-point glittered before him as he strode. He had reached the gate, and was about to issue out into the plain, when his wife Andromache came running towards him ; and behind her came the nurse carrying their boy Astyanax, the hope of Troy, beautiful as a star. Andromache clasped his hand and said, ' Dear my lord, your high heart will undo you. I know that the Greeks will all set upon you at once and slay you. And what will then become of me ? I have no father now nor lady mother ; and my seven bold brothers, Achilles slew them all in one day. You are father and mother to me, and brothers, and my gallant husband. Stay here and fight from the ramparts,

here by the fig tree where the wall is most easy to scale. Go not down into the battle. Will you make your child fatherless and your wife a widow?' Hector of the glancing helm replied, 'I have thought of all these things, dear wife. But I could not face the Trojans for shame if I skulked from the fight like a craven. And my own heart will not let me, but bids me ever fight among the foremost, winning glory for my father and myself. Yet I know well that the day must come when Troy shall perish. But my heart is not so sore for the Trojans, nor for my father or my mother or all my brave brothers who must fall in the dust that day, as for you when some Greek shall hale you away captive and rob you of the light of freedom. I pray that the mounded earth may cover me before I hear the cry of your captivity.' So spoke glorious Hector, and stretched out his arms for his child. But the boy shrank back with a cry into his nurse's bosom, in terror of his father's aspect, affrighted at the bronze and the horse-hair plume that he saw nodding terribly from the helmet's crest. His father and his mother laughed aloud; forthwith Hector took the helmet from his head and set it on the ground all shimmering. Then he kissed his son and dandled him, and prayed to Zeus to make him a better man than his father, that he might spoil his foes and gladden his mother's heart. So saying he placed the child in his wife's arms, and she took him smiling through her tears. Hector was moved to pity; he caressed her with his hand and said, 'Dear wife, be not over-sorrowful for me. No man can send me to death till my time comes. Only his doom none can escape, be he coward or be he brave. Go home and mind your housewifery, and leave war to men, and most of all to me.' So they parted, she to her house



with many a backward glance and many a tear, and he to the battle in the plain.

FROM HOMER, *Iliad* vi.

(4) *The Death of Patroclus*

By this time Diomedes's rage had spent itself, and for the rest of that day the battle went less sore against the



A GREEK SOLDIER

Trojans: at sunset they still kept the field. When night fell the Greek kings held a council of war, for they began to be afraid. They sent an embassy to Achilles, offering great gifts if he would relent from his wrath and be reconciled to Agamemnon; but Achilles was implacable, and on the morrow the battle was renewed without

him. And now the fortune of war began to turn slowly in favour of the Trojans. One by one the Greek champions—Nestor, Odysseus, Diomedes, Agamemnon himself—were wounded and withdrew from the fight, till the whole brunt of the battle fell on the gigantic shoulders of Ajax. Slowly the Greeks were pressed back over the plain and across the ditch of the rampart which they had thrown up to fence their fleet. There Hera procured them a respite. She lulled Zeus to sleep, and while he slept Poseidon rallied the Greeks and drove the Trojans back across the rampart. But the respite was brief, for when Zeus awoke Poseidon durst not remain in his sight but plunged again into his ocean depths. Zeus hung out his golden scales in the sky above the Greek host; in one scale he placed the lot of victory, in the other the lot of defeat: the scale of victory flew up and kicked the beam: the Greeks saw and trembled; and once more the Trojans came irresistibly on. Apollo flew before them unseen, dashing down the rampart with his feet, and through the breach the Trojans poured in among the ships. Ajax still fought like a lion. He snatched up a great pike, such as men use in sea-fights, and leapt from deck to deck, thrusting down the Trojans, and cheering his own men on. Then Hector called for fire.

All this while Achilles sat in his hut nursing his wrath. But his loved squire Patroclus, when he saw the rampart carried and the Trojans pouring in among the ships, could endure no more. 'Dear son of Peleus,' he cried, and burst into tears, 'dear son of Peleus, if you will not fight yourself, if some weird of the gods withholds you, suffer me at least to lead the Myrmidons to the rescue. Lend me your chariot and your arms;

perchance the Trojans will take me for you.' Achilles yielded ; for in truth he feared that Hector would burn the whole fleet and cut off his retreat to Greece. 'Go then,' he said, 'dear comrade. Take my arms and my chariot, and drive the Trojans back into the plain. But refrain your men before the gate, attempt not to storm the town, for it is not fated to fall by your hand.' So Patroclus hastened to arm himself, and Achilles to marshal his Myrmidons.

Meanwhile Hector was approaching the ship of Ajax, with a sword in one hand and a firebrand in the other. Ajax thrust at him with his pike, but with one sweep of his sword Hector slashed it in two, and Ajax was left standing with the headless shaft in his hands. His right arm was weary with wielding the great pike, and his left with the weight of his sevenfold shield ; javelins clattered on his corselet like hail, and at last the giant gave ground. Hector grasped the gunwale of the ship and threw the firebrand into the hold. The smoke rose heavenward, the Trojans gave a shout of exultation, and at that moment Patroclus charged into their flank at the head of his Myrmidons.

Before the onslaught of the unwearied Myrmidons the Trojans reeled, and the tide of battle surged back over the rampart and across the plain, while Patroclus charged furiously into the Trojans' ranks and drove them in rout toward the gate. He forgot the warning of Achilles, and thought in his presumption to storm the walls and carry Troy town with his own hand. But before the gate the Trojans rallied. In the mêlée Apollo came behind Patroclus and smote him on the back with his hand, flatlings. His helmet flew off, the joints of his cuirass were loosened, and as he reeled beneath the blow

of the god Hector thrust him through the body. While he stripped the glorious armour of Achilles from Patroclus's shoulders, Ajax dashed to the rescue and a wild fight raged over the body. The dust rose up, and the mist came down, and Greeks and Trojans struggled in the darkness, till Ajax cried in his despair, ' Oh Zeus, slay us if thou wilt, but slay us in the light ! ' While thus they struggled, Hector tugging at the feet of Patroclus and Ajax at the head, Nestor's swift son threw his armour off and raced to the camp to tell Achilles.

When Achilles heard of his dear comrade's death his grief and rage were terrible to see. He ran to the trench, and there he beheld the Greeks retreating sullenly across the plain with the dead body in their midst and the Trojans hot in pursuit. He could not charge out on them, for his armour was lost ; but Pallas Athene wrapped him in her aegis, and made a crown of flame to blaze from his head, like a beacon-flare on an island citadel. He stood on the brink of the trench and shouted his war-cry, and it rang like a clarion over the plain. Thrice he shouted, and the flame from his head blazed up to heaven. At the sound and the sight of him the Trojans halted aghast : the Greeks hastily drew the dead Patroclus within the rampart ; and night fell on the stricken field.

FROM HOMER, *Iliad* VIII.-XVII.

#### (5) *The Fight with the River*

As the Trojans halted before the Greek trench, the sun sank and darkness covered the earth. Then the wise Polydamas counselled Hector to lead the army back  
aegis] a tasselled mantle set with the Gorgon's head.

at once to Troy and man the walls ; for he was assured that now Achilles would take the field again to avenge the death of his dear comrade. But Hector laughed him to scorn, for with the morning he hoped to storm the rampart and burn the whole Greek fleet. So all that night the Trojans bivouacked in the plain.

But Achilles's mother, the sea-nymph Thetis, sped to Olympus, and entreated the fire-god Hephaestus to make a new armour for her son in place of that which Patroclus had lost. All night the strong god toiled, forging a glorious new armour, helmet and shield and corselet and greaves ; and at break of day Thetis brought them to her son. A hasty council of war was summoned : Achilles was reconciled to Agamemnon ; and together they marshalled all the army, the Myrmidons with the rest. Then Achilles donned his new armour that the god had made ; and he plucked his spear from the stand, the ashen spear that none but he could wield ; and he called to his horses, Bay and Dapple, ' See that ye bring back your master safe to-day, and leave him not dead on the field as ye left Patroclus.' Then some god opened the mouth of the bay horse, and he spoke with a human voice : ' For this day, Achilles, we will bear thee safe, but thy doom is at hand. Not by our sloth was Patroclus slain, but by the might of Apollo. And so shall it be with thee.' So much he spoke, when the Avengers stopped his mouth. Achilles answered, ' I know full well that I must die here ; but never will I cease from battle till I have given the Trojans their fill of slaughter ' ; and with a shout he charged into the field.

Wild with grief and rage he burst on the Trojans like a whirlwind, and like chaff they were scattered before him. Many fled to where Scamander flowed through

the plain and threw themselves into the River, thinking to hide under his banks from the fury of the avenger. But Achilles leapt in after them, mad for slaughter. Then the River was angered ; for his waters were befouled with blood and his channel was choked with carnage, so that he could not roll his bright flood to the sea. He gathered himself up in a huge wave, and rushed upon Achilles, bellowing like a bull, and swept his feet from beneath him. Achilles clutched at an elm-tree on the bank : it came away from the roots and fell into the stream, damming it for a moment ; and Achilles sprang up out of the channel and fled away across the plain as fast as his swift feet could bear him. But fast as he fled the River followed faster. He beat on Achilles's head, he devoured the ground at his feet, and he called to his brother Simois, that other river of the Trojan plain : ' Help, brother, help ! ' he shouted. ' Rouse all your streams from their springs, brim all your torrents, make a great wave, that we may stop this furious man who thinks himself a match for gods ! I will whelm him in sand and shingle, I will wrap him in mud and slime, that no man shall know where his bones are laid ! '

Hera was terrified when she saw her champion's peril, and she cried to the fire-god Hephaestus, ' Up, up, Hephaestus ! Haste thee ! take fire and fight this River ! ' Then Hephaestus hasted, and took flaming fire, and cast it upon the plain and upon the River. He scorched the plain, he fired the elms on the River's bank, the willows, the tamarisks, the reeds and the rushes, till the eels and fishes were scalded in their pools, and the channel seethed like a boiling cauldron, and the strong River in anguish cried for mercy and let Achilles go.

FROM HOMER, *Iliad* XVIII.-XXI.

(6) *The Death of Hector*

Soon as Achilles felt his feet firm beneath him, he hastened over the plain to where he saw the Trojans huddling through the city-gate like hunted deer. But Apollo drew him aside by a ruse, running before him in the likeness of a man, ever just out of the reach of his spear. When he had drawn Achilles away from the gate the god revealed himself in his own likeness, and mocked at his pursuer and vanished ; and Achilles turned once more toward the gate. By this all the Trojans were got within the wall save only Hector. He stood without in the plain alone, resolved to fight. From the wall King Priam descried Achilles as he rushed across the plain in his bright armour, blazing like a baleful star, and he cried to Hector to come within the gate. And Hecuba the Queen implored him by the breasts that had suckled him to come within the gate. But Hector shook his head. He feared Achilles, but not less he feared the reproaches of the Trojans, because he had scorned the advice of Polydamas and kept his men in the field to be slaughtered. So he stood, divided in mind. But when he saw Achilles close upon him, terror seized him and he fled. Achilles was now between him and the gate, so he turned and fled along the wall, and Achilles swooped after him as a hawk swoops after a trembling dove. They passed the watch-tower, and the fig-tree, and the wells of Scamander, where the Trojan women went to wash in the old days of peace before the Grecians came. Three times they raced round the city, one fleeing, one pursuing ; and the prize of the race was the life of Hector the tamer of horses. Strong and swift was he that fled, but stronger and swifter the pursuer. Always

Hector tried to edge under the wall, that his friends might aid him from above with their javelins ; and always Achilles headed him off into the plain. By this the other Greeks were come up and would have hurled at Hector with their spears, but Achilles waved them back lest they should rob him of the glory. So the Trojans watched from the wall and the Greeks from the plain, and between them those two raced like men in a dream, when the flier cannot escape nor the pursuer overtake. But when in their running they came to the wells for the fourth time Hector was aware of some one at his side. It seemed to him that it was Deiphobus, the brother whom he loved best ; but in truth it was Pallas Athene in his likeness. ‘ Brother,’ she said, ‘ let us make a stand and win or die together.’ Hector was heartened and turned at bay. He called to Achilles, ‘ I will flee no more : here will I slay or be slain. But let us make a covenant : if I am victor I will give thy body back to the Greeks for burial, and do thou so by me if thou prevail.’ But Achilles answered fiercely, ‘ Wretch, speak not to me of covenants. There are no covenants between wolves and lambs, and none shall there be betwixt me and thee till thou pay at one stroke for all my comrades slain.’ And with that he hurled his spear. It missed and stuck in the earth, but Pallas Athene plucked it forth and gave it back to him unseen by Hector. Then Hector hurled his spear in turn : it struck the shield and glanced aside, and he turned to Deiphobus for another spear. But Deiphobus had vanished, and Hector knew that he was betrayed. Yet he drew his sharp sword and swooped on Achilles like an eagle ; but as he swooped Achilles hurled again : the griding spear transfixd his throat, and he fell grovelling in



the dust. With his dying breath he implored Achilles once more to give back his body to the Trojans and accept a ransom. But Achilles glared at him and said, 'Dog, supplicate me not. Not for thy weight in gold will I give thee back. Dogs and vultures shall devour thee.' Hector answered faintly, 'Beware the wrath of Heaven for this in the day when Paris and Apollo shall slay thee at the Scaean gate'; and with these words his spirit fled.

Then Achilles devised an abominable thing. He slit the tendons of Hector's feet, and passed a thong through them and made it fast to his chariot; then lashing his horses he drove furiously towards the Greek camp, trailing the dead body behind him. At the sight a dreadful wail burst from the Trojans who were watching on the wall. But Andromache was not among the watchers. She was at home as her husband had bidden her; she was ordering her maidens even then to heat a cauldron of water that Hector might bathe when he came back from battle. At that moment she heard the wail from the ramparts. She rushed from the house like a madwoman, and ran with beating heart to the wall. And there in the plain below was the chariot driving furiously and her husband trailed behind it in the dust.

When Achilles reached the Greek camp he caused a great pyre to be built, a hundred feet every way, and they laid the body of Patroclus on the pyre and burned it. Then they gathered the bones into an urn of gold and heaped a grave-mound over them. But grief and anger would not let Achilles rest. Night by night he tossed sleepless on his bed, and every morning he mounted his chariot and dragged Hector's body three times round

the barrow of Patroclus. But the gods had not all forgotten noble Hector. By day Apollo shed a mist over his body, and every night Aphrodite anointed it with ambrosia, so that Hector remained as beautiful in death as he had been in life. Nay, Zeus himself was moved to compassion for Hector and to anger at the impious deed of Achilles. He commanded Achilles, by the mouth of the sea-nymph his mother, to abjure his barbarous vengeance and relent ; and another message he sent to King Priam, that he should go to the Greek camp without fear and ransom his son's body. So Priam loaded a mule-cart with treasure and set out with a single herald in the darkness of the night. As they drove through the divine night, Hermes the Messenger-God met them in the guise of a young Myrmidon and guided them to the camp. At his touch the Greek sentinels fell asleep, the gates of the camp opened, and they passed through unseen till they came to the hut of Achilles. Then Priam did that which no man had ever endured to do : he knelt before Achilles and kissed the terrible hands that had bereft him of so many sons. Weeping he implored Achilles for his own old father's sake to have pity on an old man and give him back the body of his son. Achilles thought of his father far away, pining for him whom he should never see more, and at the thought he burst into tears. A strange sight it was to see them weeping together, the slayer and the father of the slain ! Then Achilles made Priam sit and eat, and lie down to sleep, while he himself laid the body on a bier and placed it in the mule-cart, awaiting the dawn. But before dawn Hermes roused Priam and led him through the sleeping camp safe back to Troy. At Achilles's request the Greeks granted an armistice of eleven days for the

funeral of Hector. For nine days the Trojans hewed wood on Mount Ida and built a huge pyre—fir, and cedar, and odorous pine : on the tenth day they burned the



HERMES THE MESSENGER-GOD

body ; and on the eleventh they placed the bones in a golden coffin and piled a great mound over them. Thus they kept funeral for Hector the tamer of horses.

From HOMER, *Iliad* xxii-xxiv.

(7) *The Fall of Troy*

After Hector's death the Trojans ventured no more to sally from the gate and give battle in the open. But though the Greeks kept them pent within their walls, the town itself seemed impregnable. One night, indeed, Odysseus and Diomedes contrived to pass the gate by a ruse and stole away the Palladium, the great image of Pallas Athene which stood in the citadel; but more than that they could not achieve. The hopes of the Greeks sank still lower when the mighty Achilles was mortally wounded in a skirmish before the Scaean gate. An arrow from the bow of Paris, they say, guided by the hand of Apollo, struck him in the heel where alone he was vulnerable, and the wound being poisoned he died, as Hector with his last breath had foretold.

Yet the Greeks would not abandon the siege without one more attempt, and, force having failed, they devised a stratagem. They built an enormous wooden horse—a horse like a mountain, the poet says—and ensconced nine chosen warriors in its belly; then, leaving one man behind—for what purpose will soon appear—they slipped over under cloud of night to the neighbouring island of Tenedos, and hid behind it with all their ships.

In the morning the Trojan sentries were amazed to see no stir of life in the Greek camp, no movement of armed men, no smoke rising from the huts. Scouts were sent out, and flew back with the incredible news—the camp was deserted, the Greeks were gone, the war was over! The Trojans went mad with joy. They rushed from the gate and raced across the plain to feast their eyes on the empty camp. They wandered through it, pointing to this thing and that. 'Here,' they would

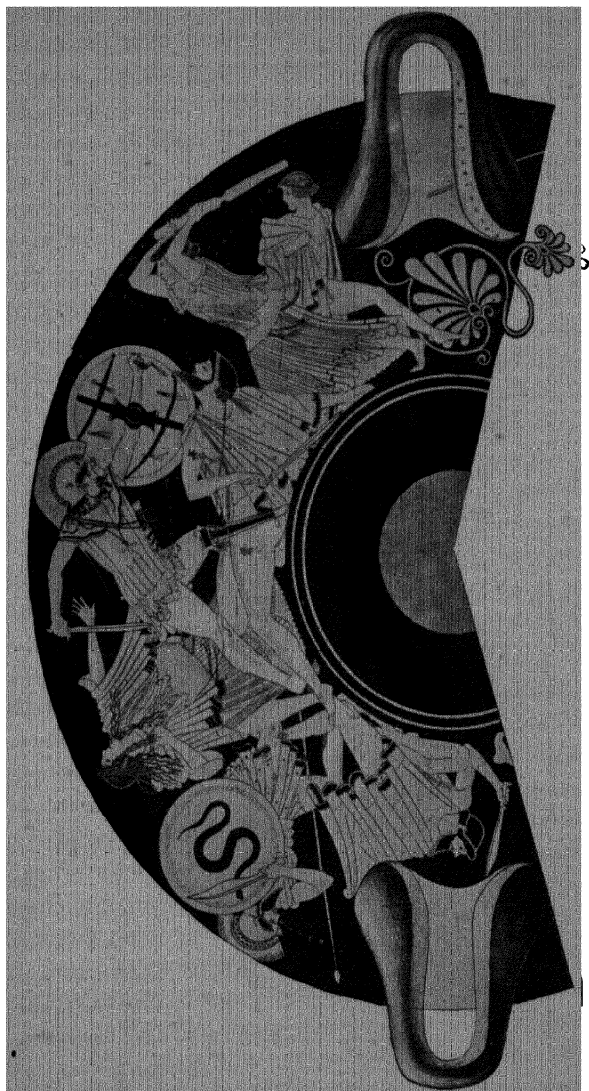
say, 'we stormed the rampart. Here lay the great Achilles.' And then, in the middle of the camp, they came on that monstrous horse. They gathered round it, gaping at the strange fabric, and marvelling what it might be, and some would have set fire to it. But others said, 'Let us drag it into the city.' At that word the priest Laocoon dashed to the front, brandishing a spear. 'Madmen,' he shouted, 'do you know the Greeks no better? There is some treachery here,' he cried, and hurled his spear against the horse's flank. It rang hollow. Then they might have hewn the monster in pieces, and Troy might perhaps have been saved. But at that moment came a fresh surprise.

A band of shepherds was advancing swiftly towards them with a captive in their midst. They dragged him before Priam dripping with water and mud, and with threats commanded him to speak. 'Alas!' cried the wretch, 'what a fate is mine, hated alike by Trojans and by Greeks! I am a Greek—I confess it—Sinon is my name. Odysseus was my enemy—but why do I linger my death? Take your revenge and have done; it will please Odysseus well.' Such speech made the Trojans still more eager, and they bade him say on. The captive continued: 'All was ready for our departure. But on the day appointed a thunder-cloud engrossed the whole sky, and the oracle spoke, "With human sacrifice ye came hither, and not without human sacrifice shall ye go hence." We bade the prophet name the victim; and every man eyed his neighbour askance, shuddering, saying in his heart, "Is it he? Is it I?" But the prophet kept silent. For ten days he sat mute in his hut; then, at the prompting of Odysseus, he opened his lips and named me. And every man rejoiced to see the

fate that he feared fallen on my head. They bound me hand and foot and made ready the altar, and yesterday I should have been sacrificed. But in the night I burst my bonds, and hid in a marsh till the fleet had sailed. And now take my life: what is life to me that have no home or country left?' Priam bade him take heart. 'Forget the Greeks,' he said. 'Henceforth let Troy be your home and country. But tell me now, what means this monstrous horse?' Sinon replied, 'The anger of Pallas Athene was on us for the theft of her image. All went amiss from the day when Odysseus and Diomedes stole it from your citadel. It was to propitiate Pallas that we built this wooden horse, and the prophet bade us make it so huge that it might not enter your gate. For when it is set up in your citadel the favour of Pallas will return to Troy.'

He ceased, and behold! a new marvel. From the calm surface of the bay two vast sea-serpents reared their heads, stemming swiftly toward the shore. Whirling up the beach, with blood-red crests and burning eyes, they flung themselves round Laocoon, and strangled him screaming in their coils; then vanished under the altar of Pallas. 'See the punishment of sacrilege!' whispered the awe-struck Trojans, and they hastened with one accord to make a breach in their walls and drag the horse into Troy. Boys and girls ran gleefully to put hand to the ropes. And so they brought it to the citadel, then gave themselves up to feasting and revelry.

But at dead of night, when all the city slept, when even the sentinels were drowned in drunken slumber, the Greek ships stole out from behind Tenedos and rowed with all speed to the Trojan shore. At the same hour the ambushed warriors slipped down from the wooden



THE SACK OF TROY

horse, and stabbed the sentinels in their sleep, and opened the gate. And through the gate, and over the breach which the Trojans themselves had made, the Greeks poured in, and the sleeping town was given up to fire and sword.

Aeneas, of whom it has been told that he was the son of Aphrodite and after Hector the best warrior in Troy, Aeneas lay asleep in his father's secluded palace. But in the deep midnight a vision stood before his face, even the ghost of Hector, black with blood and dust as when he was dragged at Achilles's chariot-wheels. And Aeneas cried in his dream, 'Oh, Hector, from what shores, long looked for, art thou come?' The appearance answered with a groan, 'Ah, goddess-born, what man could do thou hast done. But all is lost: Troy sinks in ruin: take her gods and fly.' Aeneas started from sleep and ran to the house-top. Tumult raged in the street below, fires burst from every quarter of the city, the sea was bright with the blaze. Donning his armour he plunged into the *mêlée*, and with a little band of Trojans fought his way up the steep high street to where the fight raged fiercest around Priam's palace. From the flat roof of the palace the Trojans hailed down stones and beams on their assailants: below, the Greeks had formed a tortoise with shields overlapping above their heads, while Pyrrhus, the son of Achilles, thundered on the gate with a great axe. Aeneas joined the defenders on the roof; they dislodged a pinnacle, which crushed a whole phalanx; but fresh troops of Greeks streamed up, bearing a battering-ram, and under the blows of the ram and of the axe the gate yielded, and the foe burst into the courtyard with Pyrrhus at their head. In the middle of the courtyard the queen and the princesses



clung round the household altar ; the old king stood before them, brandishing his ancient spear. He made a feeble cast at Pyrrhus, but the furious youth brushed it aside, and seizing him by the white hair plunged his sword to the hilt in the old man's breast. So under the eyes of his queen and his daughters the great King of Asia fell dead at the foot of his ancestral altar.

Aeneas thought of his own father, and turned to find himself alone on the palace roof : the other defenders were all fallen or fled. As he looked about him for a way of escape he spied a woman lurking in the shadows. He recognized her—it was Helen, the curse of Troy ; and drawing his half-sheathed sword he advanced to slay her. Suddenly his goddess-mother stood before him, not veiled in a mist as she had shown herself to him heretofore, but fair and tall as in Heaven the other gods behold her. ‘What means this mad rage?’ she said. ‘Hasten to save thy father. Tarry not for vengeance on that woman. Not Helen, not Paris have wrought this ruin, but the gods, the gods who hate Troy. Behold, I purge from thine eyes the mist that dulls all mortal vision. Lo yonder ! where those riven stones crumble in billows of dust and smoke : see, it is Poseidon with his trident toppling down the towers of Troy. See, at the Scacan gate, Hera herself leads the stormers, sword on thigh. Look up ! what shape is that high over the citadel ? It is Pallas ; her aegis flashes from the thunder-cloud !’ Aeneas's eyes were opened, and he saw the whole sky thronged with dreadful faces and the might of angry gods. He tarried no longer, but, descending from the palace-roof, made his way unscathed through fire and foe till he reached his father's house. There, taking his old father on his shoulders

and his boy by the hand, he escaped through a postern gate and fled to the hills. How he gathered round him a resolute band of Trojan refugees, and how after many perilous adventures they found a new home in Italy, these things belong to the story of Rome. With the death of Priam the tale of Troy is ended.

FROM VIRGIL *Aeneid* II.

### THE TALE OF TROY IN ENGLISH

WE know the tale of Troy best from two famous Greek epics, the *Iliad* and the *Odyssey*, both attributed by the ancients to the poet Homer. They are the oldest of European poems, and among the greatest. But the *Iliad* begins only with the tenth year of the war, and it ends with the funeral of Hector. Earlier incidents have to be gleaned from summaries of other Greek epics, now lost, and from allusions in the *Iliad* and *Odyssey* and in (later) Greek tragedy. The story of the fall of Troy comes from Virgil's great Latin epic, the *Aeneid*, where it is told by Aeneas to Dido, Queen of Carthage.

In the Middle Ages two other versions of the tale of Troy were current, and indeed were valued above Homer and Virgil; for they professed to be the works of men—Dictys the Cretan and Dares the Phrygian—who had fought in the war, the one on the Greek and the other on the Trojan side. Both are forgeries, but they were taken for truth in the Middle Ages; they were worked up by the Frenchman Benoit de S. Maure and by the Italian Guido da Colonna, and are the ground-work of many mediaeval 'Troy books,' French, English and Scots. To Benoit chiefly we owe a famous Trojan tale unknown to Homer, the pitiful story of Troilus and Cressida,

re-told in Italian by Boccaccio and in English by Chaucer and Shakespeare.

The Renaissance brought men back to Homer. The first English translation of Homer was made by George Chapman in Shakespeare's day. This was the version that introduced Keats to Homer, as he has recorded in the immortal sonnet :

*On First Looking into Chapman's Homer*

· Much have I travelled in the realms of gold,  
And many goodly states and kingdoms seen ;  
Round many Western islands have I been  
Which bards in fealty to Apollo hold.  
Oft of one wide expanse had I been told  
That deep brow'd Homer ruled as his demesne ;  
Yet did I never breathe its pure serene  
Till I heard Chapman speak out loud and bold ;  
Then felt I like some watcher of the skies  
When a new planet swims into his ken ;  
Or like stout Cortez when with eagle eyes  
He star'd at the Pacific—and all his men  
Look'd at each other with a wild surmise—  
Silent, upon a peak in Darien.'

A hundred years after Chapman, both poems were again translated into English verse by Alexander Pope. It was of this version that the great scholar Bentley said, 'Tis a pretty poem, but you must not call it Homer.' We might with equal truth invert the remark, and say, 'You must not call it Homer, but 'tis a pretty poem.' Un-Homeric as it is, Pope's version remains the most readable of all English verse translations—his version of the *Iliad* at least, for he farmed out part of the *Odyssey* to inferior hands. Later in the eighteenth century William Cowper again translated Homer, this



And all the signs in heaven are seen, that glad the  
shepherd's heart ;  
So many fires disclosed their beams, made by the Trojan  
part,  
Before the face of Ilion, and her bright turrets showed.  
A thousand courts of guard kept fires, and every guard  
allowed  
Fifty stout men, by whom their horse eat oats and hard  
white corn,  
And all did wishfully expect the silver-thronèd morn.'

GEORGE CHAPMAN, 1616.

'The troops exulting sat in order round,  
And beaming fires illumined all the ground,  
As when the moon, refulgent lamp of night,  
O'er heaven's clear azure spreads her sacred light,  
When not a breath disturbs the deep serene,  
And not a cloud o'ercasts the solemn scene ;  
Around her throne the vivid planets roll,  
And stars unnumbered gild the glowing pole,  
O'er the dark trees a yellower verdure shed,  
And tip with silver every mountain's head ;  
Then shine the vales, the rocks in prospect rise,  
A flood of glory bursts from all the skies :  
The conscious swains, rejoicing in the sight,  
Eye the blue vault, and bless the useful light.  
So many fires before proud Ilion blaze,  
And lighten glimmering Xanthus with their rays ;  
The long reflections of the distant fires  
Gleam on the walls, and tremble on the spires.  
A thousand piles the dusky horrors gild,  
And shoot a shady lustre o'er the field.  
Full fifty guards each flaming pile attend,  
Whose umbered arms, by fits, thick flashes send.  
Loud neigh the coursers o'er their heaps of corn,  
And ardent warriors wait the rising morn.'

ALEXANDER POPE, 1715.

‘ And these all night upon the bridge of war  
Sat glorying ; many a fire before them blazed :  
As when in heaven the stars about the moon  
Look beautiful, when all the winds are laid,  
And every height comes out, and jutting peak  
And valley, and the immeasurable heavens  
Break open to their highest, and all the stars  
Shine, and the Shepherd gladdens in his heart :  
So many a fire between the ships and stream  
Of Xanthus blazed before the towers of Troy,  
A thousand on the plain ; and close by each  
Sat fifty in the blaze of burning fire ;  
And eating hoary grain and pulse the steeds,  
Fixt by their cars, waited the golden dawn.’

ALFRED, LORD TENNYSON, 1868.

## II

### THE BATTLE OF AGINCOURT

THE daie following was the five and twentieth of October in the yeare 1415, being then fridaie, and the feast of Crispine and Crispinian, a daie faire and fortunate to the English, but most sorrowfull and unluckie to the French. . . .

The Frenchmen being ordered under their standards and banners, made a great shew : for suerlie they were esteemed in number six times as manie or more, than was the whole companie of the Englishmen, with wagoners, pages and all. They rested themselves, waiting for the bloudie blast of the terrible trumpet, till the houre betweene nine and ten of the clocke of the same daie, during which season, the constable made unto the capteins and other men of warre a pithie oration, exhorting and encouraging them to doo valiantlie, with manie comfortable words and sensible reasons. King Henrie also like a leader, and not as one led ; like a soveraigne, and not an inferior, perceiving a plot of ground verie strong and meet for his purpose, which on the backe halfe was fensed with the village, wherein he had lodged the night before, and on both sides defended with hedges and bushes, thought good there to imbattell his host, and so ordered his men in the same place, as he saw occasion, and as stood for his most advantage.

comfortable] comforting.

First he sent privilie two hundred archers into a lowe medow, which was neere to the vauntgard of his enimies ; but separated with a great ditch, commanding them there to keepe themselves close till they had a token to them given, to let drive at their adversaries : beside this, he appointed a vaward, of the which he made capteine Edward duke of Yorke, who of an haultie courage had desired that office, and with him were the lords Beaumont, Willoughbic, and Fanhope, and this battell was all of archers. The middle ward was governed by the king himselfe, with his brother the duke of Glocester, and the earles of Marshall, Oxenford, and Suffolke, in the which were all the strong bilmen. The duke of Excester uncle to the king led the rereward, which was mixed both with bilmen and archers. The horssemen like wings went on everie side of the battell.

Thus the king having ordered his battels, feared not the puissance of his enimies, but yet to provide that they should not with the multitude of horssemen breake the order of his archers, in whome the force of his armie consisted, (for in those daies the yeomen had their lims at libertie, sith their hosen were then fastened with one point, and their jackes long and easie to shoot in ; so that they might draw bowes of great strength, and shoot arrowes of a yard long, beside the head) he caused stakes bound with iron sharpe at both ends, of the length of five or six foot to be pitched before the archers, and of ech side the footmen like an hedge, to the intent that if the barded horsstes ran rashlie upon them, they might shortlie be gored and destroyed. Certeine persons also

vauntgard] vanguard.

sith] since.

barded] having barbs or frontlets.

vaward] vanguard.

point] tag.

haultie] high.

jackes] jerkins.



were appointed to remooove the stakes, as by the moove-ing of the archers occasion and time should require, so that the footmen were hedged about with stakes, and the horssemen stood like a bulwarke betweene them and their enimies, without the stakes. This devise of fortifying an armie, was at this time first invented : but since that time they have devised caltraps, harrowes, and other new engins against the force of horssemen ; so that if the enimies run hastilie upon the same, either are their horsstes wounded with the stakes, or their feet hurt with the other engins, so as thereby the beasts are gored, or else made unable to mainteine their course.

King Henrie, by reason of his small number of people to fill up his battels, placed his vauntgard so on the right hand of the maine battell, which himselfe led, that the distance betwixt them might scarce be perceived, and so in like case was the rereward joined on the left hand, that the one might the more readilie succour an other in time of need. When he had thus ordered his battels, he left a small companie to keepe his campe and cariage, which remained still in the village, and then calling his capteins and soldiers about him, he made to them a right grave oration, mooving them to plaie the men, whereby to obtaine a glorious victorie, as there was hope certeine they should, the rather if they would but remember the just cause for which they fought, and whome they should incounter, such faint-harted people as their ancestors had so often overcome. To conclude, manie words of courage he uttered, to stirre them to doo manfullie, assuring them that England should never be charged with his ransome, nor anie Frenchman triumph over him as a captive ; for either by famous death or

caltraps] calthorps, spiked balls of iron.

glorious victorie would he (by Gods grace) win honour and fame. . . .

But when both these armies comming within danger either of other, set in full order of battell on both sides, they stood still at the first, beholding either others demeanor, being not distant in sunder past three bow shoots. And when they had on both parts thus staid a good while without dooing anie thing, (except that certeine of the French horsemen advancing forwards, betwixt both the hosts, were by the English archers constrained to returne backe) advise was taken amongst the Englishmen, what was best for them to doo. Thereupon all things considered, it was determined, that sith the Frenchmen would not come forward, the king with his armie imbattelled (as yee have hard) should march towards them, and so leaving their trusse and baggage in the village where they lodged the night before, onelie with their weapons, armour, and stakes prepared for the purpose, as yee have heard.

These made somewhat forward, before whome there went an old knight sir Thomas Erpingham (a man of great experience in the warre) with a warder in his hand; and when he cast up his warder, all the armie shouted, but that was a signe to the archers in the medow, which therewith shot wholie altogether at the vauward of the Frenchmen, who when they perceived the archers in the medow, and saw they could not come at them for a ditch that was betwixt them, with all hast set upon the fore ward of king Henrie, but yer they could joine, the archers in the forefront, and the archers on that side which stood in the medow, so wounded the footmen, galled the horsses, and combred the men of armes,

trusse] baggage.

warder] truncheon.

that the footmen durst not go forward, the horssemen ran together upon plumps without order, some overthrew such as were next them, and the horssemen overthrew their masters, and so at the first joining, the Frenchmen were foulie discomforted, and the Englishmen highlie encouraged.

When the French vauward was thus brought to confusion, the English archers cast awaie their bowes, and tooke into their hands, axes, malls, swords, bils, and other hand-weapons, and with the same slue the Frenchmen, untill they came to the middle ward. Then approached the king, and so encouraged his people, that shortlie the second battell of the Frenchmen was overthrowne, and dispersed, not without great slaughter of men : howbeit, diverse were releevd by their varlets, and conveied out of the field. The Englishmen were so busied in fighting, and taking of the prisoners at hand, that they followed not in chase of their enimies, nor would once breake out of their arraie of battell. Yet sundrie of the Frenchmen stronglie withstood the fiercenesse of the English, when they came to handie strokes, so that the fight sometime was doubtfull and perillous. Yet as part of the French horssemen set their course to have entered upon the kings battell, with the stakes overthrowne, they were either taken or slaine. Thus this battell continued three long houres. . . .

And so about foure of the clocke in the after noone, the king when he saw no apperance of enimies, caused the reit to be blowen ; and gathering his armie together, gave thanks to almightie God for so happie a victorie, causing his prelates and chaplains to sing this psalme : *In exitu Israel de Aegypto*, and commanded everie

malls] maces.

varlets] attendants.

*In exitu*, etc.] Psalm cxiv. v. 1.

man to kneele downe on the ground at this verse : *Non nobis Domine, non nobis, sed nomini tuo da gloriam.* Which doone, he caused *Te Deum*, with certeine anthems to be soong, giving laud and praise to God, without boasting of his owne force or anic humane power.

RALPH HOLINSHED, *Chronicles of England.*

### AGINCOURT

FAIR stood the wind for France  
When we our sails advance,  
Nor now to prove our chance

Longer will tarry ;  
But putting to the main,  
At Caux, the mouth of Seine,  
With all his martial train  
Landed King Harry.

And taking many a fort,  
Furnish'd in warlike sort,  
Marcheth tow'rds Agincourt  
In happy hour ;  
Skirmishing day by day  
With those that stopped his way,  
Where the French gen'ral lay  
With all his power.

Which, in his height of pride,  
King Henry to deride,  
His ransom to provide  
Unto him sending ;  
Which he neglects the while  
As from a nation vile,

*Non nobis, etc.] Psalm cxv. v. 1.*

laud] praise.

Yet with an angry smile  
 Their fall portending.

And turning to his men,  
 Quoth our brave Henry then,  
 ‘ Though they to one be ten  
     Be not amazed :  
 Yet have we well begun ;  
 Battles so bravely won  
 Have ever to the sun  
     By fame been raised.

‘ And for myself (quoth he)  
 This my full rest shall be :  
 England ne’er mourn for me  
     Nor more esteem me :  
 Victor I will remain  
 Or on this earth lie slain,  
 Never shall she sustain  
     Loss to redeem me.

‘ Poitiers and Cressy tell,  
 When most their pride did swell,  
 Under our swords they fell :  
     No less our skill is  
 Than when our grandsire great,  
 Claiming the regal seat,  
 By many a warlike feat  
     Lopp’d the French lilies.’

The Duke of York so dread  
 The eager vaward led ;  
 With the main Henry sped  
     Among his henchmen.

This my full rest shall be] Here will I stake all—metaphor  
 from the game of primero, in which ‘ rest ’ = stake reserved.

Excester had the rear,  
A braver man not there ;  
O Lord, how hot they were  
    On the false Frenchmen !

They now to fight are gone,  
Armour on armour shone,  
Drum now to drum did groan,  
    To hear was wonder ;  
That with the cries they make  
The very earth did shake :  
Trumpet to trumpet spake,  
    Thunder to thunder.

Well it thine age became,  
O noble Erpingham,  
Which didst the signal aim  
    To our hid forces !  
When from a meadow by,  
Like a storm suddenly  
The English archery  
    Stuck the French horses.

With Spanish yew so strong,  
Arrows a cloth-yard long  
That like to serpents stung,  
    Piercing the weather ;  
None from his fellow starts,  
But playing manly parts,  
And like true English hearts  
    Stuck close together.

When down their bows they threw,  
And forth their bilbos drew,  
    bilbos] swords.

And on the French they flew,  
 Not one was tardy ;  
 Arms were from shoulders sent,  
 Scalps to the teeth were rent,  
 Down the French peasants went—  
 Our men were hardy.

This while our noble king,  
 His broadsword brandishing,  
 Down the French host did ding  
 As to o'erwhelm it ;  
 And many a deep wound lent,  
 His arms with blood besprent,  
 And many a cruel dent  
 Bruisèd his helmet.

Gloster, that Duke so good,  
 Next of the royal blood  
 For famous England stood  
 With his brave brother ;  
 Clarence, in steel so bright,  
 Though but a maiden knight,  
 Yet in that furious fight  
 Scarce such another.

Warwick in blood did wade,  
 Oxford the foe invade,  
 And cruel slaughter made  
 Still as they ran up ;  
 Suffolk his axe did ply,  
 Beaumont and Willoughby  
 Bare them right doughtily,  
 Ferrers and Fanhope.

ding] knock.

Upon Saint Crispin's Day  
 Fought was this noble fray,  
 Which fame did not delay  
     To England to carry.  
 O when shall English men  
 With such acts fill a pen ?  
 Or England breed again  
     Such a King Harry ?

MICHAEL DRAYTON.

### THE END OF THE MIDDLE AGES

FOR, indeed, a change was coming upon the world, the meaning and direction of which even still is hidden from us, a change from era to era. The paths trodden by the footsteps of ages were broken up ; old things were passing away, and the faith and the life of ten centuries were dissolving like a dream. Chivalry was dying ; the abbey and the castle were soon together to crumble into ruins ; and all the forms, desires, beliefs, convictions of the old world were passing away, never to return. A new continent had risen up beyond the western sea. The floor of heaven, inlaid with stars, had sunk back to an infinite abyss of immeasurable space ; and the firm earth itself, unfixed from its foundations, was seen to be but a small atom in the awful vastness of the universe. In the fabric of habit in which they had so laboriously built for themselves, mankind were to remain no longer.

And now it is all gone—like an unsubstantial pageant faded ; and between us and the old English there lies a gulf of mystery which the prose of the historian will never adequately bridge. They cannot come to us, and

like an unsubstantial pageant faded] from Shakespeare's *Tempest*, iv. i. 155.



our imagination can but feebly penetrate to them. Only among the aisles of the cathedral, only as we gaze upon their silent figures sleeping on their tombs, some faint conceptions float before us of what these men were when they were alive ; and perhaps in the sound of church bells, that peculiar creation of mediaeval age, which falls upon the ear like the echo of a vanished world.

JAMES ANTHONY FROUDE, *History of England*.

## THE BATTLE OF FLODDEN

WHILE King James was in this stubborn mood, the Earl of Surrey had advanced as far as Wooler, so that only four or five miles divided the armies. The English leader inquired anxiously for some guide, who was acquainted with the country, which is intersected and divided by one or two large brooks, which unite to form the river Till, and is, besides, in part mountainous. A person well mounted, and completely armed, but having the visor of his helmet lowered, to conceal his face, rode up, and then dismounting, knelt down before the earl, and offered to be his guide, if he might obtain pardon of an offence of which he had been guilty. The earl assured him of his forgiveness, providing he had not committed treason against the King of England, or personally wronged any lady—crimes which Surrey declared he would not pardon. ‘God forbid,’ said the cavalier, ‘that I should have been guilty of such shameful sin ; I did but assist in killing a Scotsman who ruled our Borders too strictly, and often did wrong to Englishmen.’ . . . His appearance was most welcome to the Earl of Surrey, who readily pardoned him the death of a Scotsman at that moment, especially since he knew him to be as well

acquainted with every pass and path on the eastern frontier, as a life of constant incursion and depredation could make him.

The Scottish army had fixed their camp upon a hill called Flodden, which rises to close in, as it were, the extensive flat called Millfield Plain. This eminence slopes steeply towards the plain, and there is an extended piece of level ground on the top, where the Scots might have drawn up their army, and waited at great advantage the attack of the English. Surrey liked the idea of venturing an assault on that position so ill, that he resolved to try whether he could not prevail on the king to abandon it. He sent a herald to invite James to come down from the height, and join battle in the open plain of Millfield below—reminded him of the readiness with which he had accepted his former challenge—and hinted, that it was the opinion of the English chivalry assembled for battle, that any delay of the encounter would sound to the king's dishonour.

We have seen that James was sufficiently rash and imprudent, but his impetuosity did not reach to the pitch that Surrey perhaps expected. He refused to receive the messenger into his presence, and returned for answer to the message, that it was not such as it became an earl to send to a king.

Surrey, therefore, distressed for provisions, was obliged to resort to another mode of bringing the Scots to action. He moved northward, sweeping round the hill of Flodden, keeping out of the reach of the Scottish artillery, until, crossing the Till near Twisell castle, he placed himself, with his whole army, betwixt James and his own kingdom. The king suffered him to make this flank movement without interruption, though it must have afforded

repeated and advantageous opportunities for attack. But when he saw the English army interposed betwixt him and his dominions, he became alarmed lest he should be cut off from Scotland. In this apprehension he was confirmed by one Giles Musgrave, an Englishman, whose counsel he used upon the occasion, and who assured him, that if he did not descend and fight with the English army, the Earl of Surrey would enter Scotland and lay waste the whole country. Stimulated by this apprehension, the king resolved to give signal for the fatal battle.

With this view the Scots set fire to their huts and the other refuse and litter of their camp. The smoke spread along the side of the hill, and under its cover the army of King James descended the eminence, which is much less steep on the northern than the southern side, while the English advanced to meet them, both concealed from each other by the clouds of smoke.

The Scots descended in four strong columns, all marching parallel to each other, having a reserve of the Lothian men commanded by Earl Bothwell. The English were also divided into four bodies, with a reserve of cavalry led by Dacre.

The battle commenced at the hour of four in the afternoon. The first which encountered was the left wing of the Scots, commanded by the Earl of Huntly and Lord Home, which overpowered and threw into disorder the right wing of the English, under Sir Edmund Howard. . . . The English cavalry, under Dacre, which acted as a reserve, appear to have kept the victors in check ; while Thomas Howard, the lord high admiral, who commanded the second division of the English, bore down and routed the Scottish division commanded by

Crawford and Montrose, who were both slain. Thus matters went on the Scottish left.

Upon the extreme right of James's army, a division of Highlanders, consisting of the clans of MacKenzie, MacLean, and others, commanded by the Earls of Lennox and Argyle, were so insufferably annoyed by the volleys of the English arrows, that they broke their ranks, and, in despite of the cries, entreaties, and signals of De la Motte, the French ambassador, who endeavoured to stop them, rushed tumultuously down hill, and being attacked at once in flank and rear by Sir Edward Stanley, with the men of Cheshire and Lancashire, were routed with great slaughter.

The only Scottish division which remains to be mentioned, was commanded by James in person, and consisted of the choicest of his nobles and gentry, whose armour was so good, that the arrows made but slight impression upon them. They were all on foot—the king himself had parted with his horse. They engaged the Earl of Surrey, who opposed to them the division which he personally commanded. The Scots attacked with the greatest fury, and, for a time, had the better. Surrey's squadrons were disordered, his standard in great danger, Bothwell and the Scottish reserve were advancing, and the English seemed in some risk of losing the battle. But Stanley, who had defeated the Highlanders, came up on one flank of the king's division; the admiral, who had conquered Crawford and Montrose, assailed them on the other. The Scots showed the most undaunted courage. Uniting themselves with the reserve under Bothwell, they formed into a circle, with their spears extended on every side, and fought obstinately. Bows being now useless, the English

advanced on all sides with their bills, a huge weapon which made ghastly wounds. But they could not force the Scots either to break or retire, although the carnage among them was dreadful. James himself died amid his warlike peers and loyal gentry. He was twice wounded with arrows, and at length despatched with a bill. Night fell without the battle being absolutely decided, for the Scottish centre kept their ground, and Home and Dacre held each other at bay. But during the night the remainder of the Scottish army drew off in silent despair from the bloody field, on which they left their king and their choicest nobles and gentlemen.

This great and decisive victory was gained by the Earl of Surrey on 9th September, 1513. The victors had about five thousand men slain, the Scots twice that number at least. But the loss lay not so much in the number of the slain, as in their rank and quality. The English lost very few men of distinction. The Scots left on the field the king, two bishops, two mitred abbots, twelve earls, thirteen lords, and five eldest sons of peers. The number of gentlemen slain was beyond calculation ; there is scarcely a family of name in Scottish history who did not lose a relative there.

SIR WALTER SCOTT, *Tales of a Grandfather*.

### LAST STAND OF THE SCOTS AT FLODDEN

By this, though deep the evening fell,  
Still rose the battle's deadly swell,  
For still the Scots, around their King,  
Unbroken, fought in desperate ring.  
Where's now the victor vaward wing,  
Where Huntly, and where Home ?—

O, for a blast of that dread horn,  
On Fontarabian echoes borne,  
That to King Charles did come,  
When Rowland brave, and Olivier,  
And every paladin and peer,  
On Roncesvalles died !  
Such blast might warn them, not in vain,  
To quit the plunder of the slain,  
And turn the doubtful day again,  
While yet on Flodden side,  
Afar, the Royal Standard flies,  
And round it toils, and bleeds, and dies,  
Our Caledonian pride !  
In vain the wish—for far away,  
While spoil and havoc mark their way,  
Near Sybil's Cross the plunderers stray.  
' O, Lady,' cried the Monk, ' away ! '  
And plac'd her on her steed,  
And led her to the chapel fair,  
Of Tilmouth upon Tweed. . . .

But as they left the dark'ning heath,  
More desperate grew the strife of death.  
The English shafts in volleys hail'd,  
In headlong charge their horse assail'd ;  
Front, flank, and rear, the squadrons sweep  
To break the Scottish circle deep,  
That fought around their King.  
But yet, though thick the shafts as snow,  
Though charging knights like whirlwinds go,  
Though bill-men ply the ghastly blow,  
Unbroken was the ring ;  
The stubborn spear-men still made good  
Their dark impenetrable wood,

Each stepping where his comrade stood,  
The instant that he fell.  
No thought was there of dastard flight ;  
Link'd in the serried phalanx tight,  
Groom fought like noble, squire like knight,  
As fearlessly and well ;  
Till utter darkness closed her wing  
O'er their thin host and wounded King.  
Then skilful Surrey's sage commands  
Led back from strife his shatter'd bands ;  
And from the charge they drew,  
As mountain-waves, from wasted lands,  
Sweep back to ocean blue.  
Then did their loss his foemen know ;  
Their King, their Lords, their mightiest low,  
They melted from the field as snow,  
When streams are swoln and south winds blow,  
Dissolves in silent dew.  
Twced's echoes heard the ceaseless plash,  
While many a broken band,  
Disorder'd, through her currents dash  
To gain the Scottish land ;  
To town and tower, to down and dale,  
To tell red Flodden's dismal tale,  
And raise the universal wail.  
Tradition, legend, tune, and song,  
Shall many an age that wail prolong :  
Still from the sire the son shall hear  
Of the stern strife, and carnage drear,  
Of Flodden's fatal field,  
Where shiver'd was fair Scotland's spear,  
And broken was her shield !

## THE MARTYRDOM OF RIDLEY AND LATIMER

THE place selected for the burning was outside the north wall of the town, a short stone's throw from the south corner of Balliol College, and about the same distance from Bocardo prison, from which Cranmer was intended to witness his friends' sufferings.

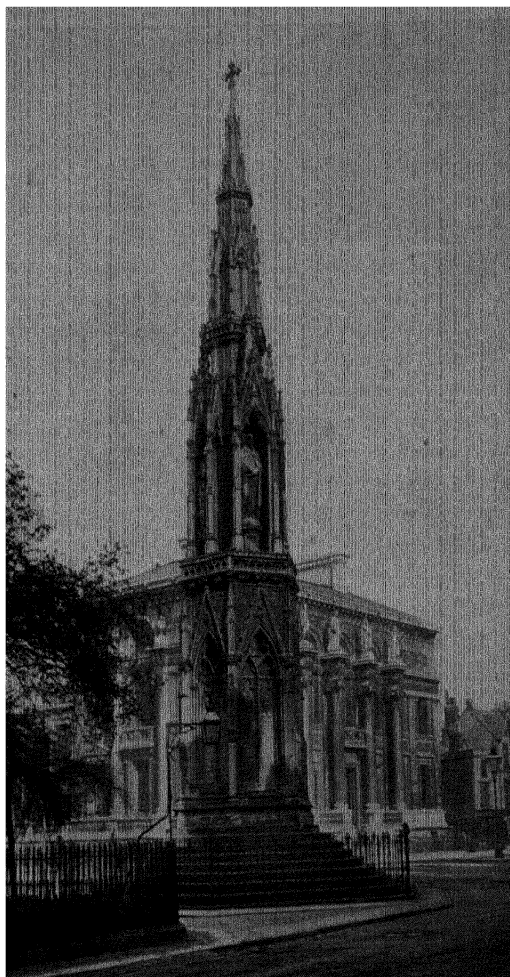
Lord Williams of Thame was on the spot by the Queen's order ; and the city guard were under arms to prevent disturbance. Ridley appeared first, walking between the mayor and one of the aldermen. He was dressed in a furred black gown, ' such as he was wont to wear being bishop,' a furred velvet tippet about his neck, and a velvet cap. He had trimmed his beard, and had washed himself from head to foot ; a man evidently nice in his appearance, a gentleman, and liking to be known as such. The way led under the windows of Bocardo, and he looked up ; but Soto, the friar, was with the Archbishop, making use of the occasion, and Ridley did not see him. In turning round, however, he saw Latimer coming up behind him in the frieze coat, with the cap and handkerchief,—the workday costume unaltered, except that under his cloak, and reaching to his feet, the old man wore a long new shroud.

' Oh ! be ye there ? ' Ridley exclaimed.

' Yea,' Latimer answered. ' Have after as fast as I can follow.'

Ridley ran to him and embraced him. ' Be of good heart, brother,' he said. ' God will either assuage the flame, or else strengthen us to abide it.' They knelt and prayed together, and then exchanged a few words in a low voice, which were not overheard.





THE MARTYRS' MEMORIAL

Lord Williams, the vice-chancellor, and the doctors were seated on a bench close to the stake. A sermon was preached, 'a scant one,' 'of scarce a quarter of an hour'; and then Ridley begged that for Christ's sake he might say a few words.

Lord Williams looked to the doctors, one of whom started from his seat, and laid his hands on Ridley's lips—

'Recant,' he said, 'and you may both speak and live.'

'So long as the breath is in my body,' Ridley answered, 'I will never deny my Lord Christ and his known truth. God's will be done in me. I commit our cause,' he said, in a loud voice, turning to the people, 'to Almighty God, who shall indifferently judge all.'

The brief preparations were swiftly made. Ridley gave his gown and tippet to his brother-in-law, and distributed remembrances among those who were nearest to him. To Sir Henry Lee he gave a new groat, to others he gave handkerchiefs, nutmegs, slices of ginger, his watch, and miscellaneous trinkets; 'some plucked off the points of his hose'; 'happy,' it was said, 'was he that might get any rag of him.'

Latimer had nothing to give. He threw off his cloak, stood bolt upright in his shroud, and the friends took their places on either side of the stake.

'O Heavenly Father,' Ridley said, 'I give unto thee most humble thanks, for that thou hast called me to be a professor of thee even unto death. Have mercy, O Lord, on this realm of England, and deliver the same from all her enemies.'

A chain was passed round their bodies, and fastened with a staple.

A friend brought a bag of powder and hung it round Ridley's neck.

‘I will take it to be sent of God,’ Ridley said. ‘Have you more for my brother?’

‘Yea, sir,’ the friend answered. ‘Give it him betimes then,’ Ridley replied, ‘lest ye be too late.’

The fire was then brought. To the last moment, Ridley was distressed about the leases, and, bound as he was, he entreated Lord Williams to intercede with the Queen about them.

‘I will remember your suit,’ Lord Williams answered. The lighted torch was laid to the faggots. ‘Be of good comfort, Master Ridley,’ Latimer cried at the crackling of the flames; ‘Play the man: we shall this day light such a candle, by God’s grace, in England, as I trust shall never be put out.’

‘*In manus tuas, Domine, commendo spiritum meum,*’ cried Ridley. ‘*Domine, recipe spiritum meum.*’

‘O Father of Heaven,’ said Latimer, on the other side, ‘receive my soul.’

Latimer died first: as the flame blazed up about him, he bathed his hands in it, and stroked his face. The powder exploded, and he became instantly senseless.

His companion was less fortunate. The sticks had been piled too thickly over the gorse that was under them; the fire smouldered round his legs, and the sensation of suffering was unusually protracted. ‘I cannot burn,’ he called; ‘Lord, have mercy on me; let the fire come to me; I cannot burn.’ His brother-in-law, with awkward kindness, threw on more wood, which only kept down the flame. At last some one lifted the pile with a ‘bill,’ and let in the air; the red tongues of fire shot up fiercely, Ridley wrested himself into the middle of them, and the powder did its work.

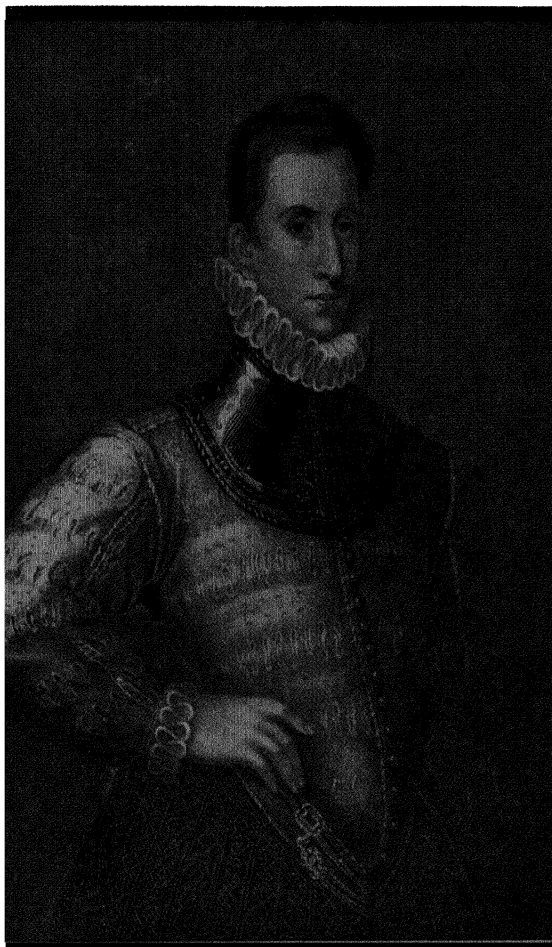
J. A. FROUDE, *History of England.*

## THE DEATH OF SIR PHILIP SIDNEY

WHEN that unfortunate stand was to be made before Zutphen, to stop the issuing out of the Spanish army from a strait ; with what alacrity soever he went to actions of honour, yet remembering that upon just grounds the ancient sages describe the worthiest persons to be ever best armed, he had completely put on his ; but meeting the marshal of the camp lightly armed, the unspotted emulation of his heart, to venture without any inequality, made him cast off his cuisses ; and so, by the secret influence of destiny, to disarm that part, where God, it seems, had resolved to strike him. Thus they go on, every man at the head of his own troop ; and the weather being misty, fell unawares upon the enemy, who had made a strong stand to receive them, near to the very walls of Zutphen, by reason of which accident their troops fell, not only to be unexpectedly engaged within the level of the great shot that played from the ramparts, but more fatally within shot of their muskets, which were laid in ambush within their own trenches.

Now whether this were a desperate cure in our leaders, for a desperate disease ; or whether misprision, neglect, audacity, or what else induced it, it is no part of my office to determine, but only to make the narration clear, and deliver rumour, as it passed then, without any stain, or enamel.

Howsoever, by this stand, an unfortunate hand out of those forespoken trenches brake the bone of Sir Philip's thigh with a musket-shot. The horse he rode upon was rather furiously choleric than bravely proud, and so  
cuisses] thigh-armour.



SIR PHILIP SIDNEY

forced him to forsake the field, but not his back, as the noblest and fittest bier to carry a martial commander to his grave. In which sad progress, passing along by the rest of the army, where his uncle the general was, and being thirsty with excess of bleeding, he called for drink, which was presently brought him ; but as he was putting the bottle to his mouth, he saw a poor soldier carried along, who had eaten his last at that same feast, ghastly casting up his eyes at the bottle. Which Sir Philip perceiving, took it from his head, before he drank, and delivered it to the poor man, with these words, ‘Thy necessity is yet greater than mine.’ And when he had pledged this poor soldier, he was presently carried to Arnheim.

Here the principal chirurgeons of the camp attended for him ; some mercenarily out of gain, others out of honour to their art, but the most of them with a true zeal (compounded of love and reverence) to do him good, and (as they thought) many nations in him. When they began to dress his wound he, both by way of charge and advice, told them that while his strength was yet entire, his body free from fever, and his mind able to endure, they might freely use their art, cut, and search to the bottom. For besides his hope of health, he could make this further profit of the pains which he must suffer, that they should bear witness, they had indeed a sensible natured man under their hands, yet one to whom a stronger spirit had given power above himself, either to do or suffer.

With love and care well mixed, they began the cure, and continued it some sixteen days, not without hope, but rather such confidence of his recovery, as the joy of

chirurgeons] surgeons.

sensible] sensitive.

their hearts overflowed their discretion, and made them spread the intelligence of it to the Queen, and all his noble friends here in England, where it was received not as private, but public good news.

Only there was one owl among all the birds, which, though looking with no less zealous eyes than the rest, yet saw, and presaged more despair ; I mean an excellent chirurgeon of the Count Hollocks, who although the Count himself lay at the same instant hurt in the throat with a musket shot, yet did he neglect his own extremity to save his friend, and to that end had sent him to Sir Philip. This chirurgeon, notwithstanding (out of love to his master) returning one day to dress his wound, the Count cheerfully asked him how Sir Philip did ? And being answered with a heavy countenance, that he was not well ; at these words the worthy Prince (as having more sense of his friend's wounds than his own) cries out, ' Away villain, never see my face again, till thou bring better news of that man's recovery ; for whose redemption many such as I were happily lost.'

Now after the sixteenth day was past, and the very shoulder-bones of this delicate patient worn through his skin, with constant and obedient posturing of his body to their art ; he judiciously observing the pangs his wounds stung him with by fits, together with many other symptoms of decay, few or none of recovery, began rather to submit his body to these artists, than any farther to believe in them. So that afterwards, how freely soever he left his body subject to their practice, and continued a patient beyond exception ; yet did he not change his mind, but as having cast off all hope, or desire of recovery, divided that little span of life which was left him in this manner.

First he called the ministers unto him ; who were all excellent men, of divers nations, and before them made such a confession of Christian faith, as no book but the heart can truly and feelingly deliver. Then desired them to accompany him in prayer, wherein he besought leave to lead the assembly, in respect, as he said, that the secret sins of his own heart were best known to himself, and out of that true sense he more properly instructed them to apply the eternal sacrifice of our Saviour's passion and merits to him.

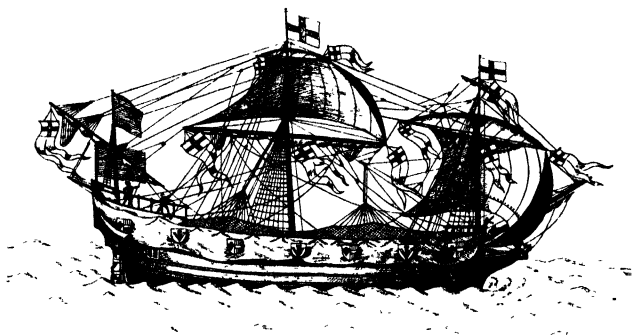
The next change used was the calling for his will ; which though at first it may seem a descent from heaven to earth again, yet he that observes the distinction of those offices, which he practised in bestowing his own, shall discern that as the soul of man is all in all, and all in every part ; so was the goodness of his nature equally dispersed into the greatest and least actions of his too short life. Which will of his will ever remain for a witness to the world that those sweet, large, even dying affections in him could no more be contracted with the narrowness of pain, grief, or sickness, than any sparkle of our immortality can be privately buried in the shadow of death.

Here again this restless soul of his (changing only the air and not the chords of her harmony) calls for music ; especially that song which himself had entitled, '*La Cuisse rompue*.' Partly (as I conceive by the name) to show that the glory of mortal flesh was shaken in him : and by that music itself to fashion and enfranchise his heavenly soul into that everlasting harmony of angels, whereof these concords were a kind of terrestrial echo.

The last scene of this tragedy was the parting between



the two brothers : the weaker showing infinite strength in suppressing sorrow, and the stronger infinite weakness in expressing of it. Sir Philip, in whom earthly passion did even as it were flash, like lights ready to burn out, recalls his brother's spirits together with a strong virtue but a weak voice, mildly blaming him for relaxing the frail strengths left to support him in his final combat of



THE 'BLACK PINESS'

in which Sir Philip Sidney's body was carried to England

separation at hand. And to stop this torrent of natural affection in both, took his leave with these admonishing words :

'Love my memory, cherish my friends ; their faith to me may assure you they are honest. But above all, govern your will and affections by the will and word of your Creator, in me beholding the end of this world, with all her vanities.'

, And with this farewell, he desired the company to lead him away. Here this noble gentleman ended the too short scene, his life ; in which path whosoever is not

confident that he walked the next way to eternal rest,  
will be found to judge uncharitably.

Thus you see how it pleased God to show forth, and  
then suddenly withdraw this precious light of our sky.

FULKE GREVILLE, LORD BROOKE,  
*Life of the renowned Sir Philip Sidney.*

### ELEGY ON SIR PHILIP SIDNEY

You knew, who knew not *Astrophill* ?  
(That I should live to say I knew,  
And have not in possession still !)  
Things known permit me to renew ;  
Of him you know his merit such,  
I cannot say, you hear too much.

Within these woods of *Arcadie*  
He chief delight and pleasure took,  
And on the mountain *Parthenie*,  
Upon the crystal liquid brook,  
The Muses met him ev'ry day,  
That taught him sing, to write, and say.

When he descended down the mount,  
His personage seemed most divine,  
A thousand graces one might count  
Upon his lovely cheerful eyne ;  
To heare him speak and sweetly smile,  
You were in Paradise the while.

A sweet attractive kind of grace,  
A full assurance given by looks,  
Continual comfort in a face,  
The lineaments of Gospel books,  
I trow that countenance cannot lie,  
Whose thoughts are legible in the eye.

Was never eye did see that face,  
Was never ear did hear that tongue,  
Was never mind did mind his grace,  
That ever thought the travel long ;  
But eyes, and ears, and ev'ry thought,  
Were with his sweet perfections caught.

**MATTHEW ROYTON.**

NOTE.—Sidney was a poet as well as a soldier. He wrote a sonnet sequence, *Astrophel to Stella*, in which he called himself Astrophel; and a pastoral romance, written for his sister, and hence known as *The Countess of Pembroke's Arcadia*.

## QUEEN ELIZABETH'S SPEECH AT TILBURY

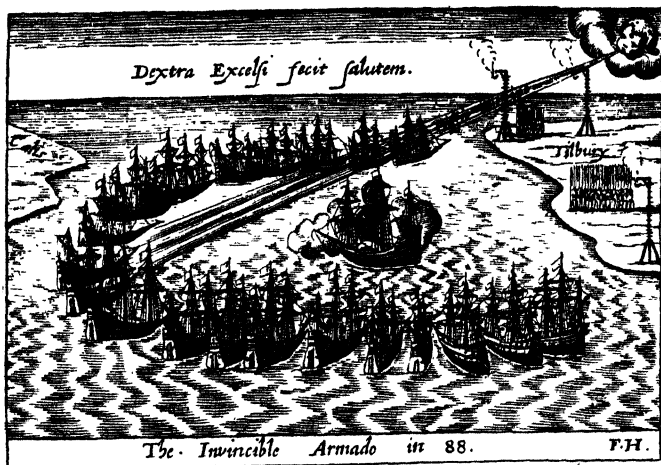
‘ MY LOVING PEOPLE,—We have been persuaded by some that are careful of our safety, to take heed how we commit ourselves to armed multitudes for fear of treachery ; but, I do assure you, I do not desire to live to distrust my faithful and loving people. Let tyrants fear ; I have always so behaved myself, that under God I have placed my chiefest strength and safeguard in the loyal hearts and good will of my subjects ; and therefore I am come amongst you as you see at this time, not for my recreation and disport, but being resolved, in the midst and heat of the battle, to live or die amongst you all—to lay down for my God, and for my kingdoms, and for my people, my honour and my blood even in the dust. I know I have the body of a weak, feeble woman ; but I have the heart and stomach of a king—and of a King of England too, and think foul scorn that Parma or Spain, or any prince in Europe, should dare to invade the borders of my realm ; to which, rather than any dishonour should grow by me, I myself will take up stomach] courage.

arms—I myself will be your general, judge, and rewarder of every one of your virtues in the field. I know already, for your forwardness, you have deserved rewards and crowns, and, we do assure you, on the word of a prince, they shall be duly paid you. For the meantime, my Lieutenant-General shall be in my stead, than whom never prince commanded a more noble or worthy subject ; not doubting but by your obedience to my general, by your concord in the camp, and your valour in the field, we shall shortly have a famous victory over these enemies of my God, of my kingdoms, and of my people.’

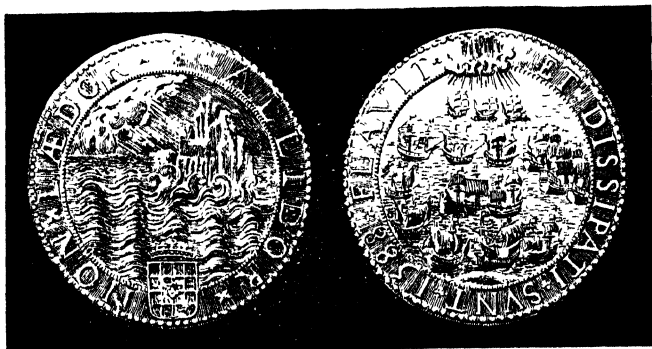
QUEEN ELIZABETH.

## THE END OF THE ARMADA

THE Spanish fleet was anchored close on the edge of the shoal water, and to attack it where it lay was impossible. It was determined to drive them out into the Channel with fire-ships, of which they were known to be afraid. Sir Henry Palmer proposed to cross to Dover and fetch over some worthless hulks ; but time would be lost, and there was not a day nor an hour to spare. Among the volunteer vessels which had attached themselves to the fleet there were many that would be useless in action, and as fit as the best for the service for which they were now needed. Eight were taken, the rigging smeared rapidly with pitch, the hulls filled with any useless material which could be extemporized that would contribute to the blaze. The sky was cloudy. The moon was late in its last quarter, and did not rise till morning ; and the tide, towards midnight, set directly down from the English position to where the ships of the Armada, seeking shelter from the bend of the coast, lay huddled



From Carleton, *A Thankfull Remembrance*, 1627



THE ARMADA MEDAL

dangerously close. Long, low, sighing gusts from the westward promised the rising of a gale. The crews of the condemned vessels undertook to pilot them to their destination, and then belay the sheets, lash the helm, fire, and leave them.

Thus, when the Spanish bells were about striking twelve, and, save the watch on deck, soldiers and seamen lay stretched in sleep, certain dark objects which had been seen dimly drifting on the tide near where the galleons lay thickest, shot suddenly into pyramids of light, flames leaping from ruddy sail to sail, flickering on the ropes, and forecastles, foremasts, and bowsprits a lurid blaze of conflagration. A cool commander might have ordered out his boats and towed the fireships clear ; but Medina Sidonia, with a strain already upon him beyond the strength of his capacity, saw coming upon him some terrible engines of destruction, like the floating mine which had shattered Parma's bridge at Antwerp. Panic spread through the entire Armada ; the enemy they most dreaded was upon them. The galleons were each riding with two anchors ; for their misfortune few of them were provided with a third. A shot was fired from the San Martin as a signal to cut or slip their cables and make to sea. Amidst cries and confusion, and lighted to their work by the blaze, they set sail and cleared away, congratulating themselves when they reached the open water, and found that all or most of them were safe, on the skill with which they had defeated the machinations of the enemy. They lay to six miles from shore, intending to return with the daylight, recover their anchors and resume their old position.

The English meanwhile, having accomplished at least part of their purpose in starting the Armada out of its

berth, weighed at leisure, and stood out after it into the Channel, Drake, with half the fleet, hanging on the skirts of the Spaniards ; Howard, with the rest, hovering near to Calais, endeavouring to drive in upon the sands or the fire-ships the last loiterers of the Armada which had been slower than the rest in getting out. . . .

Medina Sidonia intended to return to his position at Calais. Drake, whose larger mind comprehended the position in its broader bearings, was determined not only that he should never see his anchors again, but that he should be driven north through the Narrow Seas. The wind was still rising and threatened a storm. He had seen enough of the sailing powers of the galleons to be assured that until it shifted they could make no way against it ; and once in the North Sea, they would be in unknown waters without a harbour into which they could venture to run, and at all events for a time cut off from their communication with Dunkirk. They had drifted in the night further than they intended, and when the sun rose they were scattered over a large surface off Gravelines. Signals were sent up for them to collect and make back for Calais ; but Drake with his own squadron, and Henry Seymour, with the squadron of the Straits, having the advantage of wind, speed, and skill, came on them while they were still dispersed. Seymour opened the action at eight in the morning with a cluster of galleons on the Spaniards' extreme right. Reserving their fire till within a hundred and twenty yards, and wasting no cartridges at any longer distances, the English ships continued through the entire forenoon to pour into them one continuous rain of shot. They were driven in upon their own centre, where they became entangled in a confused and helpless mass, a mere target to the

English guns, Sir William Winter alone delivering five hundred shot into them, 'never out of harquebuz range, and often within speaking distance.'

Drake himself meanwhile had fallen on Medina Sidonia and Oquendo, who, with a score of galleons better handled than the rest, were endeavouring to keep sea room, and retain some command of themselves. But their wretched sailing powers put them at a disadvantage for which skill and courage could not compensate. The English were always to windward of them, and hemmed in at every turn, they too were forced back upon their consorts, hunted together as a shepherd hunts sheep upon a common, and the whole mass of them forced slowly towards the shoals and banks on the Flanders coast.

Howard came up at noon to join in the work of destruction. The English accounts tell a simple story. The Spaniards' gun practice, which had been always bad, was helpless beyond past experience. Their want of ammunition was not suspected, for they continued to fire throughout the day after their slow awkward fashion ; but their guns, worked on rolling platforms by soldiers unused to the sea, sent their shot into the air or into the water ; while the English, themselves almost untouched, fired into them without intermission from eight in the morning till sunset, 'when almost the last cartridge was spent, and every man was weary with labour.' They took no prizes and attempted to take none. Their orders were to sink or destroy. They saw three large galleons go down. Three others, as the wind fell westerly, they saw reeling helplessly towards Ostend ; and the fate of these they heard of afterwards ; but of the general effect of the fire, neither at the time nor afterwards did they know anything beyond its practical and broad results. . .



Towards sunset the wind shifted to the north-west with an increasing sea. The wounded ships were driving in a mass towards the banks, and, had the English powder held out for a few hours more, the entire Armada must have been either sunk or driven ashore. Gun after gun however fell gradually silent. A few provision ships came off from the Thames with a day or two's rations. The men were exhausted with toil and hunger combined, and the fleet hauled off to take on board the supplies so sorely needed.

Sidonia, left to himself, extricated his miserable vessels, and made sail for the North Sea, the Santa Maria going down with all hands as the sun went under the horizon. When the ships' companies were called over, it was found that four thousand men had been killed or drowned. The wounded were not mentioned, but were perhaps at least as many more. The galleons pierced and shattered were leaking in all directions, the rigging cut up, the masts splintered, the sails torn, rudders, yards, and bowsprits shot away, and still more unfortunately, most of the water-butts destroyed. The men had been kept hard at work the day before cleaning and polishing up the guns. Through some accident they had missed their evening meal. The fire-ships had spoilt their night's rest, and through the long day's desperate engagement there had been no leisure to serve out food. Nature could endure no more. To remain where they were was certain wreck, to attempt to recover Calais was to invite a fresh attack, and they fled away into the German Ocean, as close to the wind as their crippled state would bear, 'generally frightened and dismayed.'

J. A. FROUDE, *History of England.*

## THE ARMADA

ENGLAND, queen of the waves whose green inviolate  
girdle enrings thee round,

Mother fair as the morning, where is now the place of  
thy foemen found ?

Still the sea that salutes us free proclaims them stricken,  
acclaims thee crowned.

Times may change, and the skies grow strange with  
signs of treason and fraud and fear :

Foes in union of strange communion may rise against  
thee from far and near :

Sloth and greed on thy strength may feed as cankers  
waxing from year to year.

Yet, though treason and fierce unreason should league  
and lie and defame and smite,

We that know thee, how far below thee the hatred burns  
of the sons of night,

We that love thee, behold above thee the witness written  
of life in light.

Truth is in thee, and none may win thee to lie, forsaking  
the face of truth :

Freedom lives by the grace she gives thee, born again  
from thy deathless youth :

Faith shall fail, and the world turn pale, wert thou the  
prey of the serpent's tooth.

Greed and fraud, unabashed, unawed, may strive to  
sting thee at heel in vain.

Craft and fear and mistrust may leer and mourn and  
murmur and plead and plain :

Thou art thou ; and thy sunbright brow is hers that  
blasted the strength of Spain.

Mother, mother beloved, none other could claim in place  
of thee England's place :

Earth bears none that beholds the sun so pure of record,  
so clothed with grace :

Dear our mother, nor son nor brother is thine, as strong  
or as fair of face.

How shalt thou be abased ? or how shall fear take hold  
of thy heart ? of thine,

England, maiden immortal, laden with charge of life and  
with hopes divine ?

Earth shall wither, when eyes turned hither behold not  
light in her darkness shine.

England, none that is born thy son, and lives, by grace  
of thy glory, free,

Lives and yearns not at heart and burns with hope to  
serve as he worships thee ;

None may sing thee ; the sea-winds' wing beats down  
our songs as it hails the sea.

A. C. SWINBURNE, *The Armada*.

## THE LAST FIGHT OF THE 'REVENGE'

SIR RICHARD utterly refused to turne from the enemie,  
alleaging that hee would rather choose to die, then to  
dishonour himselfe, his countrey, and her Majesties  
shippe, perswading his companie that hee would passe  
through the two squadrons, in despight of them, and  
enforce those of Sivil to give him way. Which hee per-  
formed upon divers of the formost, who, as the Mariners  
terme it, sprang their luffe, and fell under the lee of the  
Revenge. But the other course had beene the better,

SIR RICHARD] Sir Richard Grenville.      Sivil] Seville.

and might right well have bene answered in so great an impossibility of prevailing. Notwithstanding out of the greatnesse of his minde, he could not be perswaded. In the meane while as hee attended those which were nearest him, the great San Philip being in the winde of him, and comming towards him, becalmed his sailes in such sort, as the shippe could neither make way, nor feele the helme : so huge and high cargd was the Spanish ship, being of a thousand and five hundreth tuns. Who after layd the Revenge aboard. When he was thus bereft of his sailes, the ships that were under his lee luffing up, also layd him aboard : of which the next was the Admiral of the Biscaines, a very mighty and puissant shippe commanded by Brittondona. The sayd Philip carried three tire of ordinance on a side, and eleven pieces in every tire. She shot eight forth right out of her chase, besides those of her sterne ports.

After the Revenge was entangled with this Philip, foure other boorded her ; two on her larboord, and two on her starboord. The fight thus beginning at three of the clock in the afternoone, continued very terrible all that evening. . . .

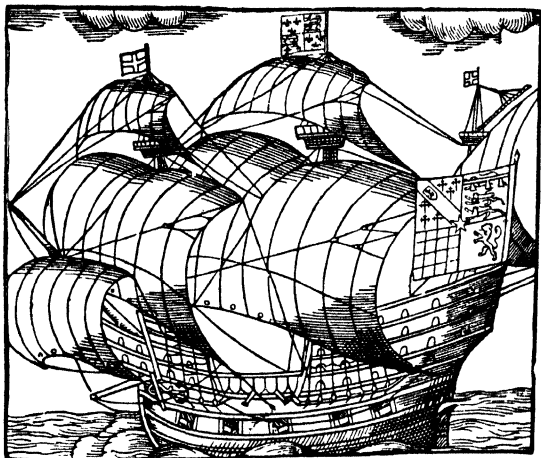
Ere the morning, from three of the clocke the day before, there had fifteene severall Armadas assayled her ; and all so ill approved their entertainment, as they were by the breake of day, far more willing to harken to a composition, then hastily to make any more assaults or entries. But as the day encreased, so our men decreased : and as the light grew more and more, by so much more grewe our discomforts. For none appeared in sight but enemies, saving one small ship called the Pilgrim, commaunded by Jacob Whiddon, who hovered

high cargd] high in the hull.

tire] tier.

all night to see the successe : but in the morning bearing with the Revenge, was hunted like a hare amongst many ravenous houndes, but escaped.

All the powder of the Revenge to the last barrell was now spent, all her pikes broken, fortie of her best men



A SHIP OF THE TIME

slaine, and the most part of the rest hurt. In the beginning of the fight shee had but one hundreth free from sicknes, and fourescore & ten sicke, laid in hold upon the Ballast. A small troupe to man such a ship, & a weake garrison to resist so mighty an army. By those hundred al was susteined, the volcis, boardings, and entrings of fifteen ships of warre, besides those which beat her at large. On the contrary, the Spanish were always supplied with souldiers brought from every squadron : all maner of Armes and powder at will. Unto ours there

remained no comfort at all, no hope, no supply either of ships, men, or weapons ; the Mastes all beaten over boord, all her tackle cut asunder, her upper worke altogether rased, and in effect evened shee was with the water, but the very foundation or bottome of a ship, nothing being left over head either for flight or defence. Sir Richard finding himselfe in this distresse, and unable any longer to make resistance, having endured in this fifteene houres fight, the assault of fifteene severall Armadas, all by turnes aboard him, and by estimation eight hundred shotte of great Artillerie, besides many assaults and entries ; and that himselfe and the shippe must needes be possessed by the enemy, who were now all cast in a ring round about him (the Revenge not able to moove one way or other, but as she was moved with the waves and billow of the sea), commaunded the Master gunner, whom hee knew to be a most resolute man, to split and sinke the shippe ; that thereby nothing might remaine of glory or victory to the Spaniards : seeing in so many houres fight, and with so great a Navie they were not able to take her, having had fifteene houres time, above ten thousand men, & fiftie and three saile of men of warre to performe it withall : and perswaded the company, or as many as hee could induce, to yelde themselves unto God, and to the mercie of none else ; but as they had, like valiant resolute men, repulsed so many enemies, they should not now shorten the honour of their Nation, by prolonging their owne lives for a few houres, or a fewe dayes. The master gunner readily condescended and divers others ; but the Captaine and the Master were of another opinion, and besought Sir Richard to have care of them : alleaging that the condescended] agreed.

Spaniard would be as ready to entertaine a composition, as they were willing to offer the same : and that there being divers sufficient and valiant men yet living, and whose wounds were not mortal, they might do their Countrey and prince acceptable service hereafter. And whereas Sir Richard had alleaged that the Spaniards should never glory to have taken one shippe of her Majestie, seeing they had so long and so notably defended themselves ; they answered, that the shippe had sixe foote water in holde, three shot under water, which were so weakely stopped, as with the first working of the sea, she must needs sinke, and was besides so crusht and brused, as shee could never be removed out of the place.

And as the matter was thus in dispute, and Sir Richard refusing to hearken to any of those reasons : the Master of the Revenge (while the Captaine wanne unto him the greater party) was convoyed aboard the Generall Don Alfonso Baçan. Who (finding none over hastie to enter the Revenge againe, doubting least Sir Richard would have blowne them up and himselfe, and perceiving by the report of the Master of the Revenge his dangerous disposition) yeelded that all their lives should be saved, the company sent for England, & the better sort to pay such reasonable ransome as their estate would beare, and in the meane season to be free from Gally or imprisonment. To this he so much the rather condescended as wel, as I have said, for feare of further losse and mischiefe to themselves, as also for the desire he had to recover Sir Richard Greenvil ; whom for his notable valure he seemed greatly to honour and admire.

When this answer was returned, and that safetie of life was promised, the common sort being now at the ende of their perill, the most drew backe from Sir Richard

and the Master gunner, being no hard matter to dissuade men from death to life. The Master gunner finding himselfe and Sir Richard thus prevented and mastered by the greater number, would have slaine himselfe with a sword, had he not bene by force withheld and locked into his Cabben. Then the Generall sent many boates aboard the Revenge, and divers of our men fearing Sir Richards disposition, stole away aboard the Generall and other shippes. Sir Richard thus overmatched, was sent unto by Alfonso Baçan to remoove out of the Revenge, the shippe being marveilous unsavorie, filled with blood and bodics of dead and wounded men like a slaughter house. Sir Richard answered that hee might doe with his body what he list, for hee esteemed it not, and as hee was carried out of the shippe he swoounded, and reviving againe desired the company to pray for him. The Generall used Sir Richard with all humanitie, and left nothing unattempted that tended to his recoverie, highly commending his valour and worthinesse, and greatly bewailing the danger wherein he was, being unto them a rare spectacle, and a resolution sildome approved, to see one shippe turne toward so many enemies, to endure the charge and boording of so many huge Armadas, and to resist and repell the assaults and entries of so many souldiers.

SIR WALTER RALEIGH, in Hakluyt's *Voyages*.

### CHARACTER OF JAMES I.

THE scene of confusion amid which he found the King seated, was no bad picture of the state and quality of James's own mind. There was much that was rich and approved] witnessed.



costly in cabinet pictures and valuable ornaments ; but they were arranged in a slovenly manner, covered with dust, and lost half their value, or at least their effect, from the manner in which they were presented to the eye. The table was loaded with huge folios, amongst which lay light books of jest and ribaldry ; and, amongst notes of unmercifully long orations and essays on king-craft, were mingled miserable roundels and ballads by the Royal Prentice, as he styled himself, in the art of poetry, and schemes for the general pacification of Europe, with a list of the names of the King's hounds and remedies against canine madness.

The King's dress was of green velvet, quilted so full as to be dagger-proof—which gave him the appearance of clumsy and ungainly protuberance ; while its being buttoned awry, communicated to his figure an air of distortion. Over his green doublet he wore a sad-coloured nightgown, out of the pocket of which peeped his hunting-horn. His high-crowned grey hat lay on the floor, covered with dust, but encircled by a carcanet of large balas rubies ; and he wore a blue velvet nightcap, in the front of which was placed the plume of a heron, which had been struck down by a favourite hawk in some critical moment of the flight, in remembrance of which the King wore this highly honoured feather.

But such inconsistencies in dress and appointments were mere outward types of those which existed in the royal character ; rendering it a subject of doubt amongst his contemporaries, and bequeathing it as a problem to future historians. He was deeply learned, without possessing useful knowledge ; sagacious in many individual cases, without having real wisdom ; fond of his power

sad-coloured nightgown] dull-coloured dressing-gown.

and desirous to maintain and augment it, yet willing to resign the direction of that, and of himself, to the most unworthy favourites ; a big and bold assertor of his rights in words, yet one who tamely saw them trampled on in deeds ; a lover of negotiations, in which he was always outwitted ; and one who feared war when conquest might have been easy. He was fond of his dignity, while he was perpetually degrading it by undue familiarity ; capable of much public labour, yet often neglecting it for the meanest amusement ; a wit, though a pedant ; and a scholar, though fond of the conversation of the ignorant and the uneducated. Even his timidity of temper was not uniform ; and there were moments of his life, and those critical, in which he showed the spirit of his ancestors. He was laborious in trifles, and a trifler where serious labour was required ; devout in his sentiments, and yet too often profane in his language ; just and beneficent by nature, he yet gave way to the iniquities and oppressions of others. He was penurious respecting money which he had to give from his own hand, yet inconsiderately and unboundedly profuse of that which he did not see. In a word, those good qualities which displayed themselves in particular cases and occasions, were not of a nature sufficiently firm and comprehensive to regulate his general conduct ; and, showing themselves as they occasionally did, only entitled James to the character bestowed on him by Sully—that he was the wisest fool in Christendom.

That the fortunes of this monarch might be as little of a piece as his character, he, certainly the least able of the Stewarts, succeeded peaceably to that kingdom, against the power of which his predecessors had, with so much difficulty, defended his native throne ; and, lastly,

although his reign appeared calculated to ensure to Great Britain that lasting tranquillity and internal peace which so much suited the King's disposition, yet, during that very reign, were sown those seeds of dissension, which, like the teeth of the fabulous dragon, had their harvest in a bloody and universal civil war.

SIR WALTER SCOTT, *The Fortunes of Nigel*.

## THE BATTLE OF NASEBY

[The first stanza is supposed to be addressed to a sergeant in Ireton's regiment. The rest of the poem is his reply].

Oh ! wherefore come ye forth, in triumph from the  
North,

With your hands, and your feet, and your raiment all  
red ?

And wherefore doth your rout send forth a joyous shout ?

And whence be the grapes of the wine-press which ye  
tread ?

' Oh evil was the root, and bitter was the fruit,

And crimson was the juice of the vintage that we trod ;  
For we trampled on the throng of the haughty and the  
strong,

Who sat in the high places, and slew the saints of God.

It was about the noon of a glorious day of June

. That we saw their banners dance and their cuirasses  
shine,

And the Man of Blood was there, with his long essencèd  
hair,

. And Astley, and Sir Marmaduke, and Rupert of the  
Rhine.

the Man of Blood] Charles I.

Like a servant of the Lord, with his Bible and his sword,  
The General rode along us to form us to the fight,  
When a murmuring sound broke out, and swell'd into a shout,

Among the godless horsemen upon the tyrant's right.  
And hark ! like the roar of the billows on the shore,  
The cry of battle rises along their charging line !  
For God ! for the Cause ! for the Church ! for the Laws !  
For Charles King of England and Rupert of the Rhine.

The furious German comes, with his clarions and his drums,

His bravoës of Alsatia, and pages of Whitehall ;  
They are bursting on our flanks. Grasp your pikes,  
close your ranks ;

For Rupert never comes but to conquer or to fall.

They are here ! They rush on ! We are broken ! We are gone !

Our left is borne before them like stubble on the blast.  
O Lord, put forth thy might ! O Lord, defend the right !  
Stand back to back, in God's name, and fight it to the last.

Stout Skippon hath a wound ; the centre hath given ground :

Hark ! hark !—What means the trampling of horsemen on our rear ?

Whose banner do I see, boys ? 'Tis he, thank God, 'tis he, boys,

Bear up another minute : brave Oliver is here.

The General] Sir Thomas Fairfax.

Alsatia] Whitefriars, a sanctuary, and so a haunt of desperadoes.

Skippon] in charge of the Parliamentary infantry.

Their heads all stooping low, their points all in a row,  
Like a whirlwind on the trees, like a deluge on the  
dykes,

Our cuirassiers have burst on the ranks of the Accurst,  
And at a shock have scattered the forest of his pikes.

Fast, fast, the gallants ride, in some safe nook to hide  
Their coward heads, predestined to rot on Temple  
Bar ;

And he—he turns, he flies :—shame on those cruel eyes  
That bore to look on torture, and dare not look on  
war.

Ho ! comrades, scour the plain ; and, ere ye strip the  
slain,

First give another stab to make your search secure,  
Then shake from sleeves and pockets their broad-pieces  
and lockets,

The tokens of the wanton, the plunder of the poor.

Fools ! your doublets shone with gold, and your hearts  
were gay and bold,

When you kissed your lily hands to your lemans  
to-day ;

And to-morrow shall the fox, from her chambers in the  
rocks,

Lead forth her tawny cubs to howl above the prey.

Where be your tongues that late mocked at heaven and  
hell and fate,

And the fingers that once were so busy with your  
blades,

Your perfum'd satin clothes, your catches and your oaths,  
• Your stage-plays and your sonnets, your diamonds  
and your spades ?

broad-pieces] twenty-shilling gold pieces.

Down, down, for ever down with the mitre and the crown,

With the Belial of the Court and the Mammon of the Pope ;

There is woe in Oxford Halls : there is wail in Durham's Stalls :

The Jesuit smites his bosom : the Bishop rends his cope.

And She of the seven hills shall mourn her children's ills,

And tremble when she thinks on the edge of England's sword ;

And the Kings of earth in fear shall shudder when they hear

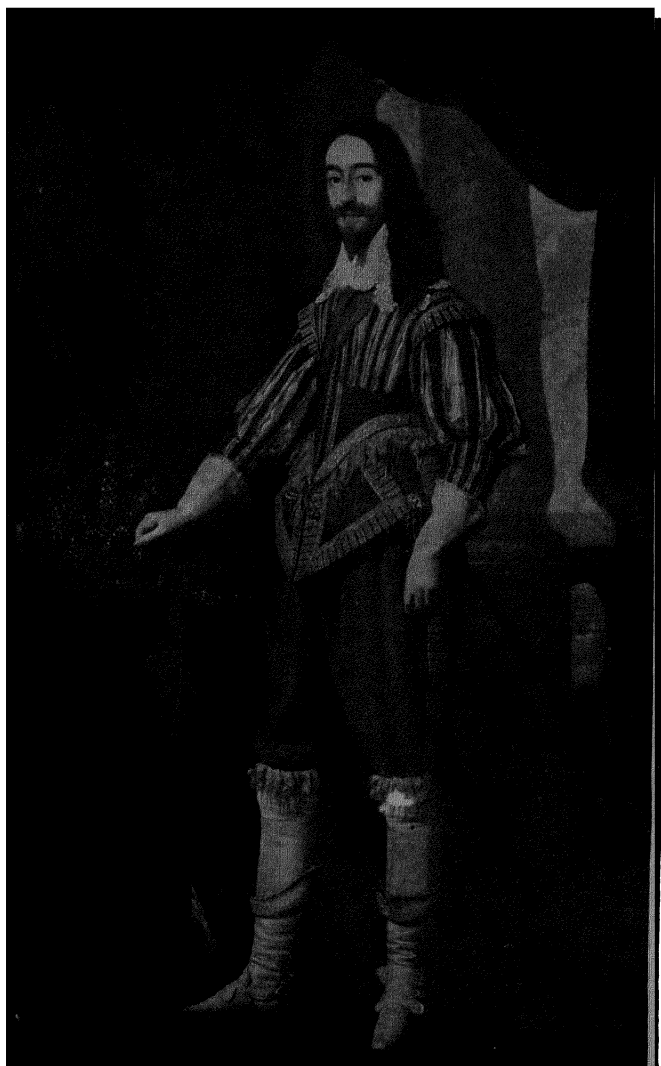
What the hand of God hath wrought for the Houses and the Word.'

LORD MACAULAY.

NOTE.—At Naseby, Sir Jacob Astley led the Royalist centre, Sir Marmaduke Langdale the left wing, and Prince Rupert the right. Rupert broke Ireton, but allowed his men to scatter in pursuit. Meanwhile Cromwell broke Langdale, and, keeping his Ironsides in hand, wheeled and fell upon the Royalist centre.

## KING CHARLES I. ON THE SCAFFOLD

AT about half-past one Colonel Hacker came to the bed-chamber door to summon the King to the scaffold. Both Herbert and the Bishop fell upon their knees weeping, 'and the King gave him his Hand to kiss, and help'd the Bishop up, for he was aged.' The King 'with a chearful look' passed along the galleries and through the Banqueting Hall lined with soldiers. Behind the soldiers, who were silent and dejected, crowds of men and women surged forward, regardless of personal safety,



CHARLES I.

praying for the King, 'to behold,' as Herbert says, 'the saddest sight England ever saw.'

Through the middle window of the Banqueting Hall the King stepped out upon the scaffold. Multitudes of people thronged Whitehall to watch the tremendous spectacle. Immediately round the scaffold, which was entirely covered with black, were companies of horse and foot. The King was accompanied only by Bishop Juxon, Colonel Hacker, and Colonel Tomlinson; these three and two masked men, the executioner and his assistant, were the most conspicuous occupants of the scaffold. Herbert was unable to endure the horror of the sight, and waited in the Banqueting Hall till the execution was over. He entrusted Bishop Juxon with the white satin night-cap in which the King was to confine his hair before the axe fell.

As the King walked on to the scaffold, he looked 'very earnestly on the Block,' and asked if there were no higher; the block, in fact, was only six inches high. This is clear, not only from contemporary records, but from some of the old engravings, notably that in the 1673 edition of the Book of Common Prayer.

The King, however, did not complain, but immediately addressed his final speech to those with him; it was impossible for his voice to carry as far as the throng waiting beyond the soldiers who surrounded the scaffold.

He began by saying he could hold his peace very well:

'If I did not think that holding my Peace would make some Men think that I did submit to the guilt, as well as to the Punishment. But I think it is my Duty to God first, and to my Country, for to clear myself both as an honest Man, a good King, and a good Christian.'

He proceeded to protest his innocence as to the



beginning of the Civil War, that he did not begin it, but the Parliament: 'they confest that the Militia was mine, but they thought it fit to have it from me.' Still, he did not lay the guilt upon the Parliament, believing that 'ill Instruments between them and me have been the chief Cause of all this Bloodshed.' Then in words of deep humility he referred to that act he had always regretted, his reluctant acquiescence in the sentence on Strafford:

'Yet for all this God forbid that I should be so ill a Christian, as not to say God's Judgments are just upon me; many times He does pay justice by an unjust Sentence: that is ordinary: I only say this, that an unjust Sentence that I suffered to take effect, is punished now by an unjust Sentence upon me.'

Next he desired to show that he died a good Christian, having forgiven all his enemies, even those in particular who had been the chief causers of his death. But his charity must go further; not only did he wish that they should repent, but that they might 'take the right way to the peace of the Kingdom, for Charity commands me not only to forgive particular Men, but my Charity commands me to endeavour to the last gasp the peace of the Kingdom.' He proceeded to give his opinion as to how his adversaries had erred 'out of the way'; for their way was the way of conquest, and 'Conquest, Sirs, in my opinion is never just, except there be a good just Cause, either for matter of wrong, or just title,' and the slightest step beyond that turned conquest into robbery.

The conclusion of the King's speech I give in full, as being for ever memorable:

'Now, Sirs, for to put you in the way; believe it, you will never do right, nor God will never prosper you,

until you give Him his due, the King his due (that is, my Successors) and the People their due, I am as much for them as any of you ; you must give God his due, by regarding rightly his Church (according to the Scriptures) which is now out of order ; for to set you in a way particularly, now I cannot ; but only this. A National Synod freely called, freely debating among themselves, must settle this, when that every opinion is freely and clearly heard. For the King indeed I will not (then turning to a gentleman that touched the Ax, he said, ‘ Hurt not the Ax that may hurt me ’). As for the King, the Laws of the Land will clearly instruct you for that ; therefore because it concerns my own particular, I only give you a touch of it. For the People : And truly I desire their Liberty and Freedom, as much as any Body whomsoever ; but I must tell you, that their Liberty and Freedom consists in having of Government, those Laws by which their Life and their Goods may be most their own. It is not for having share in Government (Sirs) that is nothing pertaining to them. A Subject and a Sovereign are clean different things ; and therefore until they do that, I mean, that you do put the People in that Liberty as I say, certainly they will never enjoy themselves. Sirs, it was for this that now I am come here. If I would have given way to an Arbitrary way, for to have all Laws changed according to the Power of the Sword, I needed not to have come here ; and therefore I tell you (and I pray God it be not laid to your Charge) that I am the Martyr of the People. In troth, Sirs, I shall not hold you much longer ; for I will only say this to you, That in truth I could have desired some little time longer, because that I would have put this that I have said in a little more order, and

a little better digested, than I have done ; and therefore I hope you will excuse me. I have delivered my Conscience, I pray God that you take those Courses that are best for the good of the Kingdom, and your own Salvation.'

At the end of this wonderful speech, wonderful at any time, but doubly so in the tremendous moments in which it was made, Bishop Juxon prompted the King to say something about his religious beliefs. Whereupon the King, with the same complete self-possession that a Minister might show in an ordinary debate in the House of Commons, if reminded of a point by a colleague on the Treasury bench, thanked the Bishop for his intervention, and declared that he died ' a Christian according to the Profession of the Church of England, as I found it left me by my Father ; and this honest Man (the Bishop) I think will witness it.' Thereupon he turned to the Puritan officers, Colonel Hacker and Colonel Tomlinson, and said : ' Sirs, excuse me for this same, I have a good cause, and I have a gracious God : I will say no more.' Then to Colonel Hacker : ' Take care that they [the executioners] do not put me to pain.' And jokingly to one who came near the axe : ' Take heed of the Axe, pray take heed of the Axe.' He turned to the executioner : ' I shall say but very short Prayers, and then thrust out my hand.' From Bishop Juxon he took the silk night-cap, and asked the executioner if his hair troubled him, and, on the executioner asking him to put it all under his cap, he did so with the help of the Bishop and the executioner.

These are the final words, as moving as any in a tragedy of Shakespeare, between the King and the Bishop :

*The King* : I have a good Cause, and a gracious God on my side.

*Dr. Juxon* : There is but one stage more : This Stage is turbulent and troublesome. It is a short one. But you may consider, it will soon carry you a very great way ; it will carry you from Earth to Heaven, and there you shall find to your great joy the Prize ; you haste to a Crown of Glory.

*The King* : I go from a corruptible to an incorruptible Crown, where no disturbance can be.

*Dr. Juxon* : You are exchanged from a temporal to an Eternal Crown, a good Exchange.

Taking off his cloak and giving his George—the insignia of the Garter—to the Bishop with the word ‘Remember,’ the King lay down, and placed his head upon the block ; ‘and, after a little pause, stretching forth his hands, the executioner at one blow severed his Head from his Body.’

JOHN BERESFORD,

*Gossip of the Seventeenth and Eighteenth Centuries.*

By kind permission of Mr. John Beresford and Mr. R. Cobden-Sanderson.

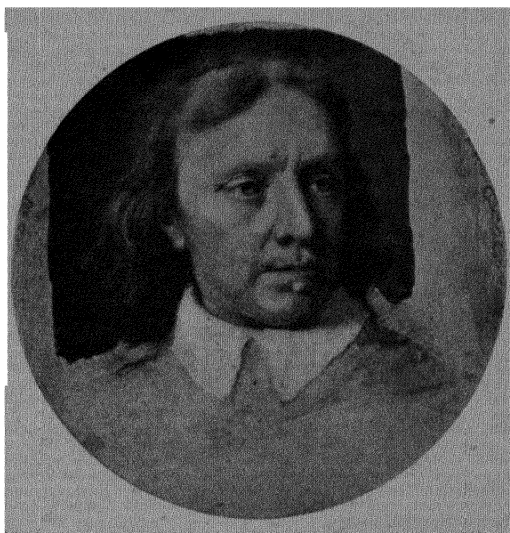
## TO THE LORD GENERAL CROMWELL, *May* 1652

*On the proposals of certain ministers at the Committee for the  
Propagation of the Gospels*

CROMWELL, our chief of men, who through a cloud  
Not of war only, but detractions rude,  
Guided by faith and matchless fortitude,  
To peace and truth thy glorious way hast ploughed,  
And on the neck of crownèd Fortune proud  
Hast reared God’s trophies, and his work pursued,  
While Darwen stream, with blood of Scots imbrued,  
And Dunbar field, resounds thy praises loud,

And Worcester's laureate wreath ; yet much remains  
To conquer still ; Peace hath her victories  
No less renowned than War : new foes arise,  
Threatening to bind our souls with secular chains.  
Help us to save free conscience from the paw  
Of hireling wolves, whose Gospel is their maw.

JOHN MILTON.



### CHARACTER OF OLIVER CROMWELL

HE was one of those men, *quos vituperare ne inimici quidem possunt, nisi ut simul laudent* ; whom his very enemies could not condemn without commending him at the same time : for he could never have done half

that mischief without great parts of courage, industry, and judgment. He must have had a wonderful understanding in the natures and humours of men, and as great a dexterity in applying them ; who, from a private and obscure birth (though of good family), without interest or estate, alliance or friendship, could raise himself to such a height, and compound and knead such opposite and contradictory tempers, humours, and interests into a consistence that contributed to his designs, and to their own destruction ; whilst himself grew insensibly powerful enough to cut off those by whom he had climbed, in the instant that they projected to demolish their own building. What was said of Cinna may very justly be said of him, *ausum, quae nemo auderet bonus ; perfecisse, quae a nullo, nisi fortissimo, perfici possent* : he attempted those things which no good man durst have ventured on ; and achieved those in which none but a valiant and great man could have succeeded. Without doubt, no man with more wickedness ever attempted any thing, or brought to pass what he desired more wickedly, more in the face and contempt of religion, and moral honesty ; yet wickedness as great as his could never have accomplished those designs, without the assistance of a great spirit, and admirable circumspection and sagacity, and a most magnanimous resolution.

When he first appeared in the Parliament, he seemed to have a person in no degree gracious, no ornament of discourse, none of those talents which use to conciliate the affections of the stander-by : yet as he grew into place and authority, his parts seemed to be raised, as if he had had concealed faculties, till he had occasion to

alliance] marriage-connection.

use them, and when he was to act the part of a great man, he did it without any indecency, notwithstanding the want of custom.

EDWARD HYDE, LORD CLARENDON,  
*History of the late Rebellion.*

## AN HORATIAN ODE

UPON CROMWELL'S RETURN FROM IRELAND

THE forward youth that would appear,  
Must now forsake his muses dear,  
Nor in the shadows sing  
His numbers languishing :

'Tis time to leave the books in dust,  
And oil the unused armour's rust,  
Removing from the wall  
The corselet of the hall.

So restless Cromwell could not cease  
In the inglorious arts of peace,  
But through adventurous war  
Urgèd his active star ;

And, like the three-forked lightning, first  
Breaking the clouds, where it was nurst,  
Did thorough his own side  
His fiery way divide ;

(For 'tis all one to courage high,  
The emulous, or enemy,  
And with such to inclose,  
Is more than to oppose ;)

Then burning through the air he went,  
And palaces and temples rent ;

And Caesar's head at last  
Did through his laurels blast.

'Tis madness to resist or blame  
The force of angry heaven's flame ;  
And if we would speak true,  
Much to the man is due

Who from his private gardens, where  
He lived reservèd and austere,  
As if his highest plot  
To plant the bergamot,

Could by industrious valour climb  
To ruin the great work of Time,  
And cast the kingdoms old  
Into another mould.

Though Justice against Fate complain,  
And plead the ancient rights in vain,  
(But those do hold or break,  
As men are strong or weak,)

Nature, that hateth emptiness,  
Allows of penetration less,  
And therefore must make room  
Where greater spirits come.

What field of all the civil war,  
Where his were not the deepest scar ?  
And Hampton shows what part  
He had of wiser art ;

Where, twining subtile fears with hope,  
He wove a net of such a scope

Caesar's] *i.e.* the King's.

laurels] The laurel-leaf was believed to avert lightning.  
There is an allusion to the laurel-wreath that Caesar wore = King  
Charles's crown.



That Charles himself might chase  
To Carisbrook's narrow case,

That thence the royal actor borne,  
The tragic scaffold might adorn,  
While round the armèd bands  
Did clap their bloody hands :

He nothing common did, or mean,  
Upon that memorable scene,  
But with his keener eye  
The axe's edge did try ;

Nor called the gods with vulgar spite  
To vindicate his helpless right,  
But bowed his comely head  
Down, as upon a bed.

This was that memorable hour,  
Which first assured the forcèd power ;  
So, when they did design  
The capitol's first line,

A bleeding head, where they begun,  
Did fright the architects to run ;  
And yet in that the state  
Foresaw its happy fate.

And now the Irish are ashamed  
To see themselves in one year tamed :  
So much one man can do,  
That does both act and know.

They can affirm his praises best,  
And have, though overcome, confessed  
How good he is, how just,  
And fit for highest trust,

Nor yet grown stiffer with command,  
 But still in the republic's hand,  
     (How fit he is to sway,  
     That can so well obey !)

He to the Commons' feet presents  
 A kingdom for his first year's rents ;  
     And, what he may, forbears  
     His fame, to make it theirs ;

And has his sword and spoils ungirt,  
 To lay them at the public's skirt :  
     So when the falcon high  
     Falls heavy from the sky,

She, having killed, no more doth search,  
 But on the next green bough to perch ;  
     Where, when he first does lure,  
     The falconer has her sure.

What may not then our isle presume,  
 While victory his crest does plume ?  
     What may not others fear,  
     If thus he crowns each year ?

As Caesar, he, ere long, to Gaul,  
 To Italy a Hannibal,  
     And to all states not free,  
     Shall climacteric be.

The Pict no shelter now shall find  
 Within his party-coloured mind,  
     But, from this valour sad,  
     Shrink underneath the plaid ;

climacteric] portentous.

Pict] Scot. The word was supposed to mean 'painted.'  
 There is an allusion to the Scottish 'party-coloured' plaid.

Happy, if in the tufted brake  
The English hunter him mistake,  
Nor lay his hounds in near  
The Caledonian deer.

But thou, the war's and fortune's son,  
March indefatigably on,  
And for the last effect,  
Still keep the sword erect ;

Besides the force it has to fright  
The spirits of the shady night,  
The same arts that did gain  
A power, must it maintain.

ANDREW MARVELL.

## CHARACTER OF OLIVER CROMWELL

WHAT can be more extraordinary, than that a person of mean birth, no fortune, no eminent qualities of body, which have sometimes, or of mind, which have often, raised men to the highest dignities, should have the courage to attempt, and the happiness to succeed in, so improbable a design, as the destruction of one of the most ancient and most solidly-founded monarchies upon the earth ? that he should have the power or boldness to put his prince and master to an open and infamous death ; to banish that numerous and strongly-allied family ; to do all this under the name and wages of a parliament ; to trample upon them too as he pleased, and spurn them out of doors when he grew weary of them ; to raise up a new and unheard-of monster out of their ashes ; to stifle that in the very infancy, and set himself above all things that ever were called sovereign

in England ; to oppress all his enemies by arms, and all his friends afterwards by artifice ; to serve all parties patiently for a while and to command them victoriously at last ; to overrun each corner of the three nations, and overcome with equal facility both the riches of the south and the poverty of the north ; to be feared and courted by all foreign princes, and adopted a brother to the gods of the earth ; to call together parliaments with a word of his pen, and scatter them again with the breath of his mouth ; to be humbly and daily petitioned that he would be pleased to be hired, at the rate of two millions a year, to be the master of those who had hired him before to be their servant, to have the estates and lives of three kingdoms as much at his disposal, as was the little inheritance of his father, and to be as noble and liberal in the spending of them ; and lastly, for there is no end of all the particulars of his glory, to bequeath all this with one word to his posterity, to die with peace at home, and triumph abroad ; to be buried among kings, and with more than regal solemnity ; and to leave a name behind him, not to be extinguished, but with the whole world ; which as it is now too little for his praises, so might have been too for his conquests, if the short line of human life could have been stretched out to the extent of his immortal designs ?

ABRAHAM COWLEY.

## THE LANDING OF CHARLES II

*May 23rd, 1660.* We weighed anchor, and, with a fresh gale and most happy weather, set sail for England. All the afternoon the King walked up and down, here and there (quite contrary to what I thought him to have

been), very active and stirring. Upon the quarterdeck he fell into discourse of his escape from Worcester, where it made me ready to weep to hear the stories that he told of his difficulties that he had passed through, as his travelling four days and three nights on foot, every step up to his knees in dirt, with nothing but a green coat and a pair of country breeches on, and a pair of country shoes that made him so sore all over his feet that he could hardly stir. Yet he was forced to run away from a miller who took him for a rogue. He sat at table at one place where the master of the house, who had not seen him for eight years, did know him, but kept it private ; when, at the same table, there was one who had been of his own regiment at Worcester, and did not know him, but made him drink the King's health, and said that the King was at least four fingers higher than he. At another place he was, by some servants of the house, made to drink, that they might know that he was not a Round-head, which they swore he was. In another place, at his inn, the master of the house, as the King was standing with his hands upon the back of a chair, by the fireside, kneeled down and kissed his hand, privately saying that he would not ask him who he was, but God bless him whither he was going. Then he spoke of the difficulties in getting a boat to get into France, and how, at Rouen, he looked so poor that the people went into the rooms before he went away to see whether he had stolen something or other.

*May 25th.* By the morning we were come close to the land, and everybody made ready to get to shore. About noon the King went in my lord's barge with the two dukes. I went, and Mr. Mansell, and one of the King's footmen, and a dog that the King loved, in a boat by

ourselves, and so got on shore when the King did, who was received by General Monk with all imaginable love and respect at his entrance upon the land of Dover. Infinite was the crowd of people, and the horsemen, citizens, and noblemen of all sorts. The mayor of the town did come, and gave him his white staff, the badge of his place, which the King did give him again. The mayor also presented him from the town a very rich Bible, which he took, and said it was the thing he loved above all things in the world. A canopy was provided for him to stand under, which he did, and talked awhile with General Monk and others, and so into a stately coach there set for him, and so away through the town towards Canterbury, without making any stay at Dover. The shouting and joy expressed by all is past all imagination.

SAMUEL PEPYS, *Diary*.

## THE LANDING OF CHARLES II.

ON the 25th of May the English world stood crowded on Dover beach, to see what kind of angel was this deliverer for whom they had sent. A man stepped out of the boat, whose thick, sensuous lips, dark hair and face of a type more common in Southern Europe, confessed an origin and temperament in every way the opposite to those of the English squire who had grown up among the Puritans of Huntingdon. The Mayor of Dover put the English Bible into the strange hand. He of the thick lips declared that 'it was the thing that he loved above all things in the world.' The worthy Mayor was enchanted at so honest an answer, for he did not perceive that the comic spirit had landed on our coast. The wittiest company of comedians that history records had come to

tread the stage for a while, as little appreciated on the whole by the English people as were the great tragedians who had played their piece and were departing, undismayed by the howling and the fury, wrapped up in the dignity of self-dependent virtue, Republicans without fear, without repentance, without hope.

G. M. TREVELYAN, *England under the Stuarts*.

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## THE GREAT PLAGUE OF LONDON

ANOTHER infected Person came, and knocked at the Door of a Citizen's House, where they knew him very well, and the Servant let him in, and being told the Master of the House was above, he ran up, and came into the Room to them as the whole Family was at supper. They began to rise up a little surpriz'd, not knowing what the Matter was, but he bid them sit still, he only came to take his leave of them. They ask'd him, 'Why, Mr.—, where are you going?' 'Going,' says he, 'I have got the Sickness, and shall die to-morrow Night.' 'Tis easier to believe, though not to describe the Consternation they were all in, the Women and the Man's Daughters, which were but little Girls, were frighted almost to Death, and got up, one running out at one Door, and one at another, some down-Stairs and some up-Stairs, and getting together as well as they could, lock'd themselves into their Chambers, and screamed out at the Window for Help, as if they had been frighted out of their Wits: The Master more compos'd than they, tho' both frighted and provok'd, was going to lay Hands on him, and thro' him down Stairs, being in a Passion, but then considering a little the

condition of the Man and the Danger of touching him, Horror seiz'd his Mind, and he stood still like one astonish'd. The poor distemper'd Man all this while, being as well diseas'd in his Brain as in his Body, stood still like one amaz'd ; at length he turns round, ' Ay ! ' says he, with all the seeming calmness imaginable, ' Is it so with you all ! Are you all disturb'd at me ? Why then, I'll go home and die there.' And so he goes immediately down Stairs : The Servant that had let him in goes down after him with a Candle, but was afraid to go past him and open the Door, so he stood on the Stairs to see what he would do ; the Man went and open'd the Door, and went out and flung the door after him.

DANIEL DEFOE, *A Journal of the Plague Year.*

## THE GREAT FIRE OF LONDON

SEPTEMBER 2, 1666. This fatal night, about ten, began the deplorable fire, near Fish Street, in London.

*September 3.* I had public prayers at home. The fire continuing, after dinner, I took coach with my wife and son, and went to the Bankside in Southwark, where we beheld that dismal spectacle, the whole City in dreadful flames near the waterside ; all the houses from the Bridge, all Thames Street, and upwards towards Cheapside, down to the Three Cranes, were now consumed ; and so returned, exceeding astonished what would become of the rest.

The fire having continued all this night (if I may call that night which was as light as day for ten miles round about, after a dreadful manner), when conspiring with a fierce eastern wind in a very dry season, I went on foot to the same place, and saw the whole south part of the



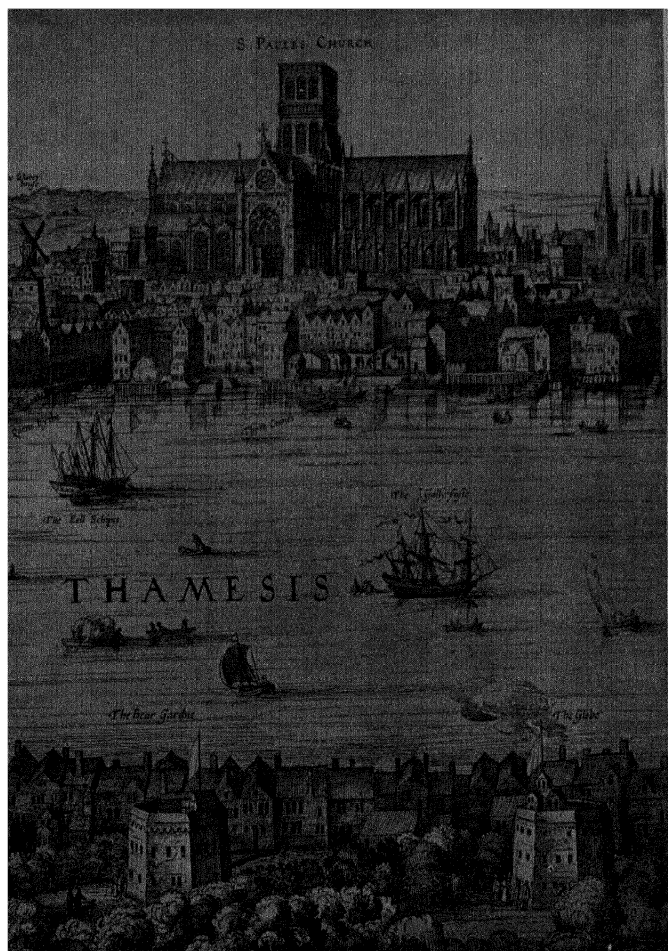
City burning from Cheapside to the Thames, and all along Cornhill (for it likewise kindled back against the wind as well as forward), Tower Street, Fenchurch Street, Gracious Street, and so along to Baynard's Castle, and was now taking hold of St. Paul's Church, to which the scaffolds contributed exceedingly. The conflagration was so universal, and the people so astonished, that, from the beginning, I know not by what despondency, or fate, they hardly stirred to quench it ; so that there was nothing heard, or seen, but crying out and lamentation, running about like distracted creatures, without at all attempting to save even their goods ; such a strange consternation there was upon them, so as it burned both in breadth and in length, the churches, public halls, Exchange, hospitals, monuments, and ornaments ; leaping after a prodigious manner from house to house, and street to street, at great distances one from the other ; for the heat with a long set of fair and warm weather had even ignited the air, and prepared the materials to conceive the fire, which devoured, after an incredible manner, houses, furniture, and every thing. Here, we saw the Thames covered with goods floating, all the barges and boats laden with what some had time and courage to save, as, on the other side, the carts, &c., carrying out to the fields, which for many miles were strewed with movables of all sorts, and tents erecting to shelter both people and what goods they could get away. Oh, the miserable and calamitous spectacle ! such as haply the world had not seen since the foundation of it, nor can be outdone till the universal conflagration thereof. All the sky was of a fiery aspect, like the top of a burning oven, and the light seen above forty miles roundabout for many nights. God grant mine

eyes may never behold the like, who now saw above 10,000 houses all in one flame ! The noise and crackling and thunder of the impetuous flames, the shrieking of women and children, the hurry of people, the fall of towers, houses, and churches, was like a hideous storm, and the air all about so hot and inflamed, that at the last one was not able to approach it, so that they were forced to stand still, and let the flames burn on, which they did, for near two miles in length and one in breadth. The clouds also of smoke were dismal, and reached upon computation, near fifty miles in length. Thus, I left it this afternoon burning, a resemblance of Sodom, or the last day. It forcibly called to my mind that passage—*non enim hic habemus stabilem civitatem* : the ruins resembling the picture of Troy. London was, but is no more ! Thus, I returned.

*September 4.* The burning still rages, and it was now gotten as far as the Inner Temple ; all Fleet Street, the Old Bailey, Ludgate Hill, Warwick Lane, Newgate, Paul's Chain, Watling Street, now flaming, and most of it reduced to ashes ; the stones of Paul's flew like grenados, the melting lead running down the streets in a stream, and the very pavements glowing with fiery redness, so as no horse, nor man, was able to tread on them, and the demolition had stopped all the passages, so that no help could be applied. The eastern wind still more impetuously driving the flames forward. Nothing but the Almighty power of God was able to stop them ; for vain was the help of man.

*September 5.* It crossed towards Whitehall ; but oh ! the confusion there was then at that Court ! It pleased

*non enim*, etc.] ' for here we have no continuing city.'  
grenados] grenades.



OLD ST. PAUL'S

his Majesty to command me, among the rest, to look after the quenching of Fetter Lane end, to preserve (if possible) that part of Holborn, whilst the rest of the gentlemen took their several posts, some at one part, and some at another (for now they began to bestir themselves, and not till now, who hitherto had stood as men intoxicated, with their hands across), and began to consider that nothing was likely to put a stop but the blowing up of so many houses as might make a wider gap than any had yet been made by the ordinary method of pulling them down with engines. This some stout seamen proposed early enough to have saved near the whole City, but this some tenacious and avaricious men, aldermen, &c., would not permit, because their houses must have been of the first. It was, therefore, now commanded to be practised ; and my concern being particularly for the Hospital of St. Bartholomew, near Smithfield, where I had many wounded and sick men, made me the more diligent to promote it ; nor was my care for the Savoy less. It now pleased God, by abating the wind, and by the industry of the people, when almost all was lost infusing a new spirit into them, that the fury of it began sensibly to abate about noon, so as it came no farther than the Temple westward, nor than the entrance of Smithfield north : but continued all this day and night so impetuous toward Cripplegate and the Tower, as made us all despair ; it also brake out again in the Temple ; but the courage of the multitude persisting, and many houses being blown up, such gaps and desolations were soon made, as, with the former three days' consumption, the back fire did not so vehemently urge upon the rest as formerly. There was yet no standing near the burning and glowing ruins by near a furlong's space.

The coal and wood-wharfs, and magazines of oil, rosin, &c., did infinite mischief, so as the invective which a little before I had dedicated to his Majesty and published, giving warning what probably might be the issue of suffering those shops to be in the City, was looked upon as a prophecy.

The poor inhabitants were dispersed about St. George's Fields, and Moorfields, as far as Highgate, and several miles in circle, some under tents, some under miserable huts and hovels, many without a rag, or any necessary utensils, bed or board, who from delicateness, riches, and easy accommodations in stately and well-furnished houses, were now reduced to extremest misery and poverty.

In this calamitous condition, I returned with a sad heart to my house, blessing and adoring the distinguishing mercy of God to me and mine, who, in the midst of all this ruin, was like Lot, in my little Zoar, safe and sound.

*September 6.* Thursday. I represented to his Majesty the case of the French prisoners at war in my custody, and besought him that there might be still the same care of watching at all places contiguous to unseized houses. It is not indeed imaginable how extraordinary the vigilance and activity of the King and the Duke was, even labouring in person, and being present to command, order, reward, or encourage workmen; by which he showed his affection to his people, and gained theirs. Having, then, disposed of some under cure at the Savoy, I returned to Whitehall, where I dined at Mr. Offley's, the groom-porter, who was my relation.

*September 7.* I went this morning on foot from Whitehall as far as London Bridge, through the late Fleet Street, Ludgate Hill, by St. Paul's, Cheapside,

Exchange, Bishopsgate, Aldersgate, and out to Moorfields, thence through Cornhill, &c., with extraordinary difficulty, clambering over heaps of yet smoking rubbish, and frequently mistaking where I was : the ground under my feet so hot, that it even burnt the soles of my shoes. In the meantime his Majesty got to the Tower by water, to demolish the houses about the graff, which, being built entirely about it, had they taken fire and attacked the White Tower, where the magazine of powder lay, would undoubtedly not only have beaten down and destroyed all the bridge, but sunk and torn the vessels in the river, and rendered the demolition beyond all expression for several miles about the country.

At my return I was infinitely concerned to find that goodly Church, St. Paul's—now a sad ruin, and that beautiful Portico (for structure comparable to any in Europe, as not long before repaired by the late King) now rent in pieces, flakes of vast stone split asunder, and nothing remaining entire but the inscription in the architrave, showing by whom it was built, which had not one letter of it defaced ! It was astonishing to see what immense stones the heat had in a manner calcined, so that all the ornaments, columns, friezes, capitals, and projectures of massy Portland stone, flew off, even to the very roof, where a sheet of lead covering a great space (no less than six acres by measure) was totally melted. The ruins of the vaulted roof falling, broke into St. Faith's, which being filled with the magazines of books belonging to the Stationers, and carried thither for safety, they were all consumed, burning for a week following. It is also observable that the lead over the altar at the east end, was untouched, and among the  
graff] moat.

divers monuments the body of one bishop remained entire. Thus lay in ashes that most venerable church, one of the most ancient pieces of early piety in the Christian world, besides near one hundred more. The lead, iron-work, bells, plate, &c., melted ; the exquisitely wrought Mercers' Chapel, the sumptuous Exchange, the august fabric of Christ Church, all the rest of the Companies' Halls, splendid buildings, arches, entries, all in dust ; the fountains dried up and ruined, whilst the very waters remained boiling ; the voragos of subterranean cellars, wells, and dungeons, formerly warehouses, still burning in stench and dark clouds of smoke, so that in five or six miles traversing about I did not see one load of timber unconsumed, nor many stones but what were calcined white as snow.

The people, who now walked about the ruins, appeared like men in some dismal desert, or rather, in some great city laid waste by a cruel enemy ; to which was added the stench that came from some poor creatures' bodies, beds, and other combustible goods. Sir Thomas Gresham's statue, though fallen from its niche in the Royal Exchange, remained entire, while all those of the Kings since the Conquest were broken to pieces ; also the standard in Cornhill, and Queen Elizabeth's effigies, with some arms on Ludgate, continued with but little detriment, whilst the vast iron chains of the City streets, hinges, bars, and gates of prisons, were many of them melted, and reduced to cinders by the vehement heat. Nor was I yet able to pass through any of the narrower streets, but kept the widest ; the ground and air, smoke and fiery vapour, continued so intense, that my hair was almost singed, and my feet unsufferably surbated. The

voragos] whirlpools, craters.      surbated] sore with walking.

bye-lanes and narrower streets were quite filled up with rubbish ; nor could one have possibly known where he was, but by the ruins of some Church, or Hall, that had some remarkable tower, or pinnacle, remaining.

I then went towards Islington and Highgate, where one might have seen 200,000 people of all ranks and degrees dispersed, and lying along by their heaps of what they could save from the fire, deploring their loss ; and, though ready to perish for hunger and destitution, yet not asking one penny for relief, which to me appeared a stranger sight than any I had yet beheld. His Majesty and Council indeed took all imaginable care for their relief, by proclamation for the country to come in, and refresh them with provisions.

In the midst of all this calamity and confusion, there was, I know not how, an alarm begun that the French and Dutch, with whom we were now in hostility, were not only landed, but even entering the City. There was, in truth, some days before, great suspicion of those two nations joining ; and now that they had been the occasion of firing the town. This report did so terrify, that on a sudden there was such an uproar and tumult that they ran from their goods, and, taking what weapons they could come at, they could not be stopped from falling on some of those nations whom they casually met, without sense or reason. The clamour and peril grew so excessive, that it made the whole Court amazed, and they did with infinite pains and great difficulty, reduce and appease the people, sending troops of soldiers and guards, to cause them to retire into the fields again, where they were watched all this night. I left them pretty quiet, and came home sufficiently weary and broken. Their spirits thus a little calmed, and the



affright abated, they now began to repair into the suburbs about the City, where such as had friends, or opportunity, got shelter for the present ; to which his Majesty's proclamation also invited them.

Still, the plague continuing in our parish, I could not, without danger, adventure to our church.

*September 10.* I went again to the ruins ; for it was now no longer a city.

*September 13.* I presented his Majesty with a survey of the ruins, and a plot for a new City, with a discourse on it ; whereupon, after dinner, his Majesty sent for me into the Queen's bed-chamber, her Majesty and the Duke only being present. They examined each particular, and discoursed on them for near an hour, seeming to be extremely pleased with what I had so early thought on. The Queen was now in her cavalier riding-habit, hat and feather, and horseman's coat, going to take the air.

JOHN EVELYN, *Diary.*

## CHARACTER OF CHARLES II.

THE King was then thirty years of age, and, as might have been supposed, past the levities of youth, and the extravagance of pleasure. He had a very good understanding. He knew well the state of affairs both at home and abroad. He had a softness of temper, that charmed all who came near him, till they found how little they could depend on good looks, kind words, and fair promises : in which he was liberal to excess, because he intended nothing by them, but to get rid of importunities and to silence all further pressing upon him. He seemed to have no sense of religion : both at prayers

then] *i.e.* in 1660, at the Restoration.

and sacrament he, as it were, took care to satisfy people, that he was in no way concerned in that about which he was employed. So that he was very far from being an hypocrite, unless his assisting at those performances was a sort of hypocrisy (as no doubt it was ;) but, he was sure not to increase that by any the least appearance of religion. He said once to myself, he was no atheist, but he could not think God would make a man miserable only for taking a little pleasure out of the way. He disguised his popery to the last. But when he talked freely, he could not help letting himself out against the liberty that under the reformation all men took of inquiring into matters of religion ; for from their inquiring into matters of religion, they carried the humour farther, to inquire into matters of state. He said often, he thought government was a much safer and easier thing where the authority was believed infallible, and the faith and submission of the people was implicit : about which I had once much discourse with him. He was affable and easy, and loved to be made so by all about him. The great art of keeping him long was, the being easy, and the making everything easy to him. He had made such observations on the French government, that he thought a king who might be checked, or have his ministers called to an account by a parliament, was but a king in name. He had a great compass of knowledge, though he was never capable of much application or study. He understood the mechanics and physic : and was a good chemist, and much set on several preparations of mercury, chiefly the fixing it. He understood navigation well : but above all he knew the architecture of ships so perfectly, that in that respect he was exact rather more than became a prince. His apprehension was quick,

and his memory good. He was an everlasting talker. He told his stories with a good grace : but they came in his way too often. He had a very ill opinion both of men and women ; and did not think that there was either sincerity or chastity in the world out of principle, but that some had either the one or the other out of humour or vanity.

He thought that nobody did serve him out of love : and so he was quits with all the world, and loved others as little as he thought they loved him. He hated business, and could not be easily brought to mind any : but when it was necessary, and he was set to it,



CHARLES II.

he would stay as long as his ministers had work for him. The ruin of his reign, and of all his affairs, was occasioned chiefly by his delivering himself up at his first coming over to a mad range of pleasure. One of the race of the Villiers, then married to Palmer, a papist, soon after made earl of Castlemaine, who afterwards, being separated from him, was advanced to be duchess of Cleveland, was his first and longest mistress. . . .

He had the art of making all people grow fond of him at first, by a softness in his whole way of conversation, as he was certainly the best bred man of his age. But when it appeared how little could be built on his promise,

they were cured of the fondness that he was apt to raise in them. When he saw young men of quality, who had something more than ordinary in them, he drew them about him, and set himself to corrupt them both in religion and morality ; in which he proved so unhappily successful, that he left England much changed at his death from what he had found it at his restoration. He loved to talk over all the stories of his life to every new man that came about him. His stay in Scotland, and the share he had in the war of Paris, in carrying messages from the one side to the other, were his common topics. He went over these in a very graceful manner ; but so often, and so copiously, that all those who had been long accustomed to them grew weary of them : and when he entered on those stories they usually withdrew : so that he often began them in a full audience, and before he had done, there were not above four or five left about him : which drew a severe jest from Wilmot, Earl of Rochester. He said, he wondered to see a man have so good a memory as to repeat the same story without losing the least circumstance, and yet not remember that he had told it to the same persons the very day before. This made him fond of strangers ; for they hearkened to all his often repeated stories, and went away as in a rapture at such an uncommon condescension in a king.

BISHOP BURNET, *History of his own Times*.

### EPITAPH ON CHARLES II.

Here lies our sovereign Lord the King,  
Whose word no man relies on,  
Who never said a foolish thing  
Nor never did a wise one.

EARL OF ROCHESTER.

## BURIAL OF MONMOUTH

IN the meantime many handkerchiefs were dipped in the Duke's blood ; for, by a large part of the multitude he was regarded as a martyr who had died for the Protestant religion. The head and body were placed in a coffin covered with black velvet, and were laid privately under the communion table of St. Peter's Chapel in the Tower. Within four years the pavement of the chancel was again disturbed, and hard by the remains of Monmouth were laid the remains of Jeffreys. In truth there is no sadder spot on the earth than that little cemetery. Death is there associated, not, as in Westminster Abbey and Saint Paul's, with genius and virtue, with public veneration and with imperishable renown ; not, as in our humblest churches and churchyards, with everything that is most endearing in social and domestic charities ; but with whatever is darkest in human nature and in human destiny, with the savage triumph of implacable enemies, with the inconstancy, the ingratitude, the cowardice of friends, with all the miseries of fallen greatness and of blighted fame. Thither have been carried, through successive ages, by the rude hands of jailers, without one mourner following, the bleeding relics of men who had been the captains of armies, the leaders of parties, the oracles of senates, and the ornaments of courts. Thither was borne, before the window where Jane Grey was praying, the mangled corpse of Guilford Dudley. Edward Seymour, Duke of Somerset, and Protector of the realm, reposes there by the brother whom he murdered. There has mouldered away the headless trunk of John Fisher, Bishop of Rochester and Cardinal of Saint Vitalis, a man worthy to have lived in

a better age, and to have died in a better cause. There are laid John Dudley, Duke of Northumberland, Lord High Admiral, and Thomas Cromwell, Earl of Essex, Lord High Treasurer. There, too, is another Essex, on whom nature and fortune had lavished all their bounties in vain, and whom valour, grace, genius, royal favour, popular applause, conducted to an early and ignominious doom. Not far off sleep two chiefs of the great house of Howard—Thomas, fourth Duke of Norfolk, and Philip, eleventh Earl of Arundel. Here and there, among the thick graves of unquiet and aspiring statesmen, lie more delicate sufferers; Margaret of Salisbury, the last of the proud name of Plantagenet, and those two fair Queens who perished by the jealous rage of Henry. Such was the dust with which the dust of Monmouth mingled.

LORD MACAULAY, *History of England*.

## CHARACTER OF JAMES II

UPON this, I will digress a little, to give an account of the duke's character, whom I knew for some years so particularly, that I can say much upon my own knowledge. He was very brave in his youth, and so much magnified by monsieur Turenne, that till his marriage lessened him, he really clouded the king, and passed for the superior genius. He was naturally candid and sincere, and a firm friend, till affairs and his religion wore out all his first principles and inclinations. He had a great desire to understand affairs: and in order to that he kept a constant journal of all that passed, of which he showed me a great deal. The Duke of Buckingham gave me once a short but severe character of the

Turenne] The famous French soldier, in whose army James served several campaigns before the Restoration.

two brothers. It was the more severe because it was true : the king (he said) could see things if he would, and the duke would see things if he could. He had no true judgment, and so was soon determined by those whom he trusted : but he was obstinate against all other advices. He was bred with high notions of the kingly authority, and laid it down for a maxim, that all who opposed the king were rebels in their hearts. He was naturally eager and revengeful : and was against the taking off any that set up in an opposition to the measures of the court and who by that means grew popular in the house of commons. He was for rougher methods. He continued for many years dissembling his religion, and seemed zealous for the church of England : but it was chiefly on design to hinder all propositions that tended to unite us among ourselves. He was a frugal prince, and brought his court into method and magnificence : for he had 100,000*l.* a year allowed him. He was made high admiral : and he came to understand all the concerns of the sea very particularly.

He was a prince that seemed made for greater things than will be found in the course of his life, more particularly of his reign : he was esteemed in the former parts of his life, a man of great courage, as he was quite through it a man of great application to business : he had no vivacity of thought, invention, or expression : he was naturally a man of truth, fidelity, and justice : but his religion was so infused in him, and he was so managed in it by his priests, that the principles which nature had laid in him, had little power over him, when the concerns of his church stood in the way : he was a gentle master, and was very easy to all who came near  
taking off] buying off, bribing.

him : yet he was not so apt to pardon as one ought to be that is the viceregent of that God, who is slow to anger and ready to forgive. In a word, if it had not been for his popery, he would have been, if not a great yet a good prince.

BISHOP BURNET, *History of his own Times*.

## JAMES II. AS ADMINISTRATOR

CHARLES died on the 6th of February, 1685. His brother James, who succeeded him, was a man of stronger military instincts than any English king since Henry the Eighth. He had served through four campaigns under Turenne and through two more with the Spaniards, and his narrative of his wars shows that he had studied the military profession with singular industry and intelligence of observation. Nor was he less interested in naval affairs. He had commanded an English fleet in two great actions without discredit as an Admiral, and with signal honour as a brave man. Moreover, he felt genuine pride in the prowess alike of the English sailor and the English soldier. Finally he had shown uncommon ability and diligence as an administrator. The Duke of Wellington a century and a half later spoke with the highest admiration of the system which James had established at the Office of Ordinance, and actually restored it, as Marlborough had restored it before him, when he himself became Master-General. The Admiralty again acknowledges that his hand is still felt for good in the direction of the Navy. In fact, whatever his failings, James was an able, painstaking, and conscientious public servant, and as such has no little claim to the gratitude of the nation.

HON. J. W. FORTESCUE *A History of the British Army*.

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### III

#### BARBARA S———

ON the noon of the 14th of November, 1743 or 4, I forget which it was, just as the clock had struck one, Barbara S——, with her accustomed punctuality, ascended the long rambling staircase, with awkward interposed landing places, which led to the office, or rather a sort of box with a desk in it, whereat sat the then Treasurer of (what few of our readers may remember) the Old Bath Theatre. All over the island it was the custom, and remains so I believe to this day, for the players to receive their weekly stipend on the Saturday. It was not much that Barbara had to claim.

This little maid had just entered her eleventh year ; but her important station at the theatre, as it seemed to her, with the benefits which she felt to accrue from her pious application of her small earnings, had given an air of womanhood to her steps and to her behaviour. You would have taken her to have been at least five years older.

Till lately she had merely been employed in choruses, or where children were wanted to fill up the scene. But the manager, observing a diligence and adroitness in her above her age, had for some few months past intrusted to her the performance of whole parts. You may guess the self-consequence of the promoted Barbara.

She had already drawn tears in young Arthur ; had rallied Richard with infantine petulance in the Duke of York ; and in her turn had rebuked that petulance when she was Prince of Wales. . . .

As I was about to say—at the desk of the then Treasurer of the old Bath Theatre presented herself the little Barbara S——.

The parents of Barbara had been in respectable circumstances. The father had practised, I believe, as an apothecary in the town. But his practice, from causes which I feel my own infirmity too sensibly that way to arraign—or perhaps from that pure infelicity which accompanies some people in their walk through life, and which it is impossible to lay at the door of imprudence—was now reduced to nothing. They were in fact in the very teeth of starvation, when the manager, who knew and respected them in better days, took the little Barbara into his company.

At the period I commenced with, her slender earnings were the sole support of the family, including two younger sisters. I must throw a veil over some mortifying circumstances. Enough to say, that her Saturday's pittance was the only chance of a Sunday's (generally their only) meal of meat.

One thing I will only mention, that in some child's part, where in her theatrical character she was to sup off a roast fowl (O joy to Barbara !) some comic actor, who was for the night caterer for this dainty—in the misguided humour of his part, threw over the dish such a quantity of salt (O grief and pain of heart to Barbara !) that when he crammed a portion of it into her mouth, she was obliged sputteringly to reject it ; and what with shame of her ill-acted part, and pain of real appetite at

missing such a dainty, her little heart sobbed almost to breaking, till a flood of tears, which the well-fed spectators were totally unable to comprehend, mercifully relieved her.

This was the little starved, meritorious maid, who stood before old Ravenscroft, the treasurer, for her Saturday's payment.

Ravenscroft was a man, I have heard many old theatrical people besides herself say, of all men least calculated for a treasurer. He had no head for accounts, paid away at random, kept scarce any books, and summing up at the week's end, if he found himself a pound or so deficient, blest himself that it was no worse.

Now Barbara's weekly stipend was a bare half-guinea. By mistake he popped into her hand—a whole one.

Barbara tripped away.

She was entirely unconscious at first of the mistake : God knows, Ravenscroft would never have discovered it.

But when she had got down to the first of those uncouth landing-places, she became sensible of an unusual weight of metal pressing her little hand.

Now mark the dilemma.

She was by nature a good child. From her parents and those about her she had imbibed no contrary influence. But then they had taught her nothing. Poor men's smoky cabins are not always porticoes of moral philosophy. This little maid had no instinct to evil, but then she might be said to have no fixed principle. She had heard honesty commended, but never dreamed of its application to herself. She thought of it as something which concerned grown-up people—men and women. She had never known temptation, or thought of preparing resistance against it.

Her first impulse was to go back to the old treasurer, and explain to him his blunder. He was already so confused with age, besides a natural want of punctuality, that she would have had some difficulty in making him understand it. She saw *that* in an instant. And then it was such a lot of money ! And the image of a large allowance of butcher's meat on their table next day came across her, till her little eyes glistened, and her mouth moistened. But then Mr. Ravenscroft had always been so good-natured, had stood her friend behind the scenes, and even recommended her promotion to some of her little parts. But again the old man was reputed to be worth a world of money. He was supposed to have fifty pounds a year clear of the theatre. And then came staring upon her the figures of her stockingless and shoeless sisters. And when she looked at her own neat white cotton stockings, which her situation at the theatre had made it indispensable for her mother to provide for her, with hard straining and pinching from the family stock, and thought how glad she should be to cover their poor feet with the same—and how then they could accompany her to rehearsals, which they had hitherto been precluded from doing, by reason of their unfashionable attire—in these thoughts she reached the second landing-place—the second, I mean, from the top—for there was still another left to traverse.

Now virtue support Barbara !

And that never-failing friend did step in—for at that moment a strength not her own, I have heard her say, was revealed to her—a reason above reasoning—and without her own agency, as it seemed (for she never felt her feet to move) she found herself transported back to

the individual desk she had just quitted, and her hand in the hand of old Ravenscroft, who in silence took back the refunded treasure, and who had been sitting (good man) insensible to the lapse of minutes, which to her were anxious ages; and from that moment a deep peace fell upon her heart, and she knew the quality of honesty.

A year or two's unrepining application to her profession brightened up the feet, and the prospects, of her little sisters, set the whole family upon their legs again, and released her from the difficulty of discussing moral dogmas upon a landing-place.

I have heard her say, that it was a surprise, not much short of mortification, to her to see the coolness with which the old man pocketed the difference, which had caused her such moral throes.

CHARLES LAMB.

NOTES.—‘Young Arthur’ is a character in Shakespeare’s *King John*; the ‘Duke of York’ and the ‘Prince of Wales’ appear in Shakespeare’s *Richard III.*

‘Porticoes of moral philosophy.’ Lamb alludes to the Stoa, or Portico, at Athens, which gave its name to the Stoic school of moral philosophy.

## GREEN BREEKS

It is well known in the South that there is little or no boxing at the Scottish schools. About forty or fifty years ago, however, a far more dangerous mode of fighting, in parties or factions, was permitted in the streets of Edinburgh, to the great disgrace of the police, and danger of the parties concerned. These parties were generally formed from the quarters of the town in which the combatants resided, those of a particular square or

district fighting those of an adjoining one. Hence it happened that the children of the higher classes were often pitted against those of the lower, each taking their side according to the residence of their friends. So far as I recollect, however, it was unmingled either with feelings of democracy, or aristocracy, or indeed with malice or ill-will of any kind towards the opposite party. In fact, it was only a rough mode of play. Such contests were, however, maintained with great vigour with stones, and sticks, and fisticuffs, when one party dared to charge, and the other stood their ground. Of course mischief sometimes happened ; boys are said to have been killed at these *Bickers*, as they were called, and serious accidents certainly took place, as many contemporaries can bear witness.

The author's father residing in George Square, in the southern side of Edinburgh, the boys belonging to that family, with others in the square, were arranged into a sort of company, to which a lady of distinction presented a handsome set of colours. Now this company or regiment, as a matter of course, was engaged in weekly warfare with the boys inhabiting the Crosscauseway, Bristo-street, the Potter-row—in short, the neighbouring suburbs. These last were chiefly of the lower rank, but hardy loons, who threw stones to a hair's breadth, and were very rugged antagonists at close quarters. The skirmish sometimes lasted for a whole evening, until one party or the other was victorious, when, if ours were successful, we drove the enemy to their quarters, and were usually chased back by the reinforcements of bigger lads who came to their assistance. If, on the contrary, we were pursued, as was often the case, into the precincts of our square, we were in our turn supported by

our elder brothers, domestic servants, and similar auxiliaries.

It followed, from our frequent opposition to each other, that though not knowing the names of our enemies, we were yet well acquainted with their appearance, and had nicknames for the most remarkable of them. One very active and spirited boy might be considered as the principal leader in the cohort of the suburbs. He was, I suppose, thirteen or fourteen years old, finely made, tall, blue-eyed, with long fair hair, the very picture of a youthful Goth. This lad was always first in the charge, and last in the retreat—the Achilles at once, and Ajax, of the Crosscauseway. He was too formidable to us not to have a cognomen, and, like that of a knight of old, it was taken from the most remarkable part of his dress, being a pair of old green livery breeches, which was the principal part of his clothing; for, like Pentapolin, according to Don Quixote's account, Green-Breeks, as we always called him, always entered the battle with bare arms, legs, and feet.

It fell, that once upon a time, when the combat was at the thickest, this plebeian champion headed a charge, so rapid and furious, that all fled before him. He was several paces before his comrades, and had actually laid his hands on the patrician standard, when one of our party, whom some misjudging friend had intrusted with a *couteau de chasse*, or hanger, inspired with a zeal for the honour of the corps, worthy of Major Sturgeon himself, struck poor Green-Breeks over the head, with strength sufficient to cut him down. When this was seen, the casualty was so far beyond what had ever taken place before, that both parties fled different ways, leaving poor Green-Breeks with his bright hair plentifully

dabbled in blood, to the care of the watchman, who (honest man) took care not to know who had done the mischief. The bloody hanger was flung into one of the Meadow ditches, and solemn secrecy was sworn on all hands ; but the remorse and terror of the actor were beyond all bounds, and his apprehensions of the most dreadful character. The wounded hero was for a few days in the Infirmary, the case being only a trifling one. But though enquiry was strongly pressed on him, no argument could make him indicate the person from whom he had received the wound, though he must have been perfectly well known to him. When he recovered, and was dismissed, the author and his brothers opened a communication with him, through the medium of a popular gingerbread baker, of whom both parties were customers, in order to tender a subsidy in name of smart-money. The sum would excite ridicule were I to name it ; but sure I am that the pockets of the noted Green-Breeks never held so much money of his own. He declined the remittance, saying that he would not sell his blood ; but at the same time reprobated the idea of being our informer, which he said was *clam*, *i.e.* base or mean. With much urgency he accepted a pound of snuff for the use of some old woman—aunt, grandmother, or the like—with whom he lived. We did not become friends, for the *bickers* were more agreeable to both parties than any more pacific amusement ; but we conducted them ever after under mutual assurances of the highest consideration for each other.

SIR WALTER SCOTT,

*Introduction to the Waverley Novels.*

bright hair . . . dabbled in blood] from Shakespeare's  
*Richard III.* i. iv. 53-4.



## THE DEFENCE OF EL CARMEN

VERY early in this century the Brazilians became convinced that in the Argentine nation they had a determined foe to their aggressive and plundering policy, and for many years they waged war against Buenos Ayres, putting forth all their feeble energies in operations by land and sea to crush their troublesome neighbour, until 1828, when they finally abandoned the contest. During this war the Imperialists conceived the idea of capturing the Patagonian settlement of El Carmen, which they knew to be quite unprotected. Three ships of war, with a large number of soldiers, were sent to effect this insignificant conquest, and in due time reached the Rio Negro. One of the ships came to grief on the bar, which is very difficult; and there it eventually became a total wreck. The other two succeeded in getting safely into the river. The troops, to the number of five hundred men, were disembarked and sent out to capture the town, which is twenty miles distant from the sea. The ships at the same time proceeded up the river, though it was scarcely thought that their co-operation would be required to take so weak a place as the Carmen. Happily for the colonists, the Imperial armada found the navigation difficult, and one of the ships ran on to a sandbank about half-way to the town; the other proceeded alone, only to arrive when it was all over with the land force. This force, finding it impossible to continue its march near the river, owing to the steep hills intersected by valleys and ravines and covered with a dense forest of thorns, was compelled to take a circuitous route leading it several miles away

from the water. Tidings of the approaching army soon reached the Carmen, and all able-bodied men within call were quickly mustered in the fort. They numbered only seventy, but the Patagonians were determined to defend themselves. Women and children were brought into the fort ; guns were loaded and placed in position ; then the commander had a happy inspiration, and all the strong women were made to display themselves on the walls in male attire. Dummy soldiers, hastily improvised from blocks of wood, bolsters, and other materials, were also placed at intervals ; so that when the Brazilians arrived in sight they were surprised to see four or five hundred men, as they thought, on the ramparts before them.

From the high ground behind the town where they had halted they commanded a view of the river for several miles, but the expected ships were not yet in sight. The day had been oppressively hot, without a cloud, and that march of about thirty miles over the waterless desert had exhausted the men. Probably they had been suffering from sea-sickness during the voyage ; at any rate, they were now mad with thirst, worn out, and not in a fit state to attack a position seemingly so strongly defended. They determined to retire, and wait for a day or two, and then attack the place in concert with the ships.

To the joy and amazement of the Patagonians, their formidable enemy left without firing a shot. Another happy inspiration came to the aid of the commander, and as soon as the Brazilians had disappeared behind the rising ground, his seventy men were hastily dispatched to collect and bring in all the horses pasturing in the valley. When the invaders had been about three

or four hours on their spiritless return march, the thunder of innumerable hoofs was heard behind them, and looking back, they beheld a great army, as they imagined in their terror, charging down upon them. These were their seventy foes, spread in an immense half-moon, in the hollow of which over a thousand horses were being driven along at frantic speed.

The Brazilians received their equine enemy with a discharge of musketry ; but though many horses were slain or wounded, the frantic yells of the drivers behind still urged them on, and in a few moments, blind with panic, they were trampling down the invaders. In the meantime the Patagonians were firing into the confused mass of horses and men ; and by a singular chance—a miracle it was held to be at the time—the officer commanding the Imperial troops was shot dead by a stray bullet ; then the men threw down their arms and surrendered at discretion—five hundred disciplined soldiers of the Empire to seventy poor Patagonians, mostly farmers, tradesmen, and artisans.

The honour of the Empire was very little to those famishing wretches crying out with frothing mouths for water instead of quarter. Leaving their muskets scattered about the plain, they were marched by their captors down to the river, which was about four miles off, and reached it at a point just where the bank slopes down between the Parrots' Cliff on one side, and the house I resided in on the other. Like a herd of cattle maddened with thirst, they rushed into the water, trampling each other down in their haste, so that many were smothered, while others, pushed too far out by the surging mass behind, were swept from their feet by the swift current and drowned. When they had drunk

their fill, they were driven like cattle to the Carmen and shut up within the fort. In the evening the ship arrived before the town, and, going a little too near the shore on the opposite side, ran aground. The men in her were quickly apprised of the disaster which had overtaken the land force; meanwhile the resolute Patagonians, concealed amongst the trees on the shore, began to pepper the deck with musket-balls; the Brazilians, in terror for their lives, leaped into the water and swam to land; and when darkness fell the colonists had crowned their brave day's work by the capture of the Imperial war-vessel *Itaparica*. No doubt it was soon pulled to pieces, good building material being rather expensive on the Rio Negro; a portion of the wreck, however, still lies in the river, and often, when the tide was low, and those old brown timbers came up above the surface, like the gaunt fossil ribs of some gigantic Pliocene monster, I have got out of my boat and stood upon them experiencing a feeling of great satisfaction. Thus the awful war-cloud burst, and the little colony, by pluck and cunning and readiness to strike at the proper moment, saved itself from the disgrace of being conquered by the infamous Empire of the tropics.

W. H. HUDSON, *Idle Days in Patagonia*.

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## THE RED THREAD OF HONOUR

THROUGH the physical horrors of warfare, Poetry discerns the redeeming nobleness. For in truth, when war is not prolonged, the kindling of all the higher passions prevents the access of the baser ones. . . . I will illustrate this by one more anecdote from the

campaign to which allusion has already been made—Sir Charles Napier's campaign against the robber tribes of Upper Scinde.

A detachment of troops was marching along a valley, the cliffs overhanging which were crested by the enemy. A sergeant with eleven men chanced to become separated from the rest by taking the wrong side of a ravine, which they expected soon to terminate, but which suddenly deepened into an impassable chasm. The officer in command signalled to the party an order to return. They mistook the signal for a command to charge; the brave fellows answered with a cheer, and charged. At the summit of the steep mountain was a triangular platform, defended by a breastwork, behind which were seventy of the foe. On they went, charging up one of those fearful paths, eleven against seventy. The contest could not long be doubtful with such odds. One after another they fell—six upon the spot, the remainder hurled backwards; but not until they had slain nearly twice their own number.

There is a custom, we are told, amongst the hillsmen, that when a great chieftain of their own falls in battle, his wrist is bound with a thread either of red or green, the red denoting the highest rank. According to custom, they stripped the dead and threw their bodies over the precipice. When their comrades came they found their corpses stark and gashed; but round both wrists of every British hero was twined the red thread!

I think you will perceive how Poetry, expressing in this rude symbolism unutterable admiration of heroic daring, had given another aspect to war than that of butchery; and you will understand how, with such a foe, and such a general as the English commander, who

more than once refused battle because the wives and children of the enemy were in the hostile camp, and he feared for their lives, carnage changed its character and became chivalry ; and how it was that the British troops learned to treat their captive women with respect ; and the chieftains of the Cutchee hills offered their swords and services with enthusiasm to their conqueror ; and the wild hill-tribes, transplanted to the plains, became as persevering in agriculture as they had been before in war.

FREDERICK W. ROBERTSON.

### THE LOSS OF THE 'CLEOPATRA'

IN December last, the American ship *Cleopatra* was descried by Captain Hughes of the Liverpool steamer *Lord Gough*, near the St. George's Shoal, with her colours at half-mast and evidently sinking. The gale and the sea were so terrible that it seemed madness to help her ; but volunteers came forward, and a boat was manned, when suddenly, the colours were hauled down. Captain Hughes, however, persevered, the desperate adventure succeeded, and the crew of the *Cleopatra* was saved.

The United States Government forwarded thanks and rewards to Captain Hughes and his men ; but noble as their conduct was, Captain Pendleton of the *Cleopatra* had done a nobler thing. He was asked why his colours were hauled down and replied, 'Because we had no boats, and thought it wrong to imperil other lives in a hopeless attempt.' The *Cleopatra* was then water-logged, and Captain Pendleton and his men faced the certainty of death by drowning rather than tempt others, strangers, into danger.

Honour to the name of the brave ! That deed on the  
*Cleopatra* is equal to the conduct of the soldiers on the  
*Birkenhead*, and should live like it in song.

*The Spectator*, 1890.

By kind permission of the Editor.

NOTE.—Tennyson was deeply moved by this story, and meant to write a poem on it.

### THE LOSS OF THE BIRKENHEAD

[The troop-ship *Birkenhead* was wrecked in Simon's Bay, South Africa, in 1852 : 454 of the crew and soldiers perished.]

RIGHT on our flank the crimson sun went down,  
The deep sea rolled around in dark repose,  
When, like the wild shriek from some captured town,  
A cry of women rose.

The stout ship *Birkenhead* lay hard and fast,  
Caught, without hope, upon a hidden rock ;  
Her timbers thrilled as nerves, when thro' them passed  
The spirit of that shock.

And ever like base cowards, who leave their ranks  
In danger's hour, before the rush of steel,  
Drifted away, disorderly, the planks,  
From underneath her keel.

Confusion spread, for, though the coast seemed near,  
Sharks hovered thick along that white sea brink.  
The boats could hold ?—not all—and it was clear  
She was about to sink.

' Out with those boats, and let us haste away,'  
. Cried one, ' ere yet yon sea the bark devours.'  
The man thus clamouring was, I scarce need say,  
No officer of ours.

We knew our duty better than to care

For such loose babblers, and made no reply,  
Till our good colonel gave the word, and there  
Formed us in line to die.

There rose no murmur from the ranks, no thought,  
By shameful strength, unhonoured life to seek ;  
Our post to quit we were not trained, nor taught  
To trample down the weak.

So we made women with their children go,  
The oars ply back again and yet again ;  
Whilst, inch by inch, the drowning ship sank low,  
Still under steadfast men.

What follows why recall ? The brave who died,  
Died without flinching in the bloody surf ;  
They sleep as well, beneath that purple tide,  
As others, under turf ;—

They sleep as well, and, roused from their wild grave,  
Wearing their wounds like stars, shall rise again,  
Joint heirs with Christ, because they bled to save  
His weak ones, not in vain.

If that day's work no clasp or medal mark,  
If each proud heart no cross of bronze may press,  
Nor cannon thunder loud from Tower and Park,  
This feel we, none the less :

That those whom God's high grace there saved from ill—  
Those also, left His martyrs in the bay—  
Though not by siege, though not in battle, still  
Full well had earned their pay.

SIR FRANCIS HASTINGS DOYLE.



## THE DEATH OF CAPTAIN OATES

[In 1912 Captain Scott reached the South Pole, only to find that it had already been reached by the Norse expedition under Captain Amundsen. The following extract describes his return to his base.]

ON this same day a blizzard met them after they had marched for half an hour, and Scott seeing that not one of them could face such weather, pitched camp and stayed there until the following morning. Then they struggled on again with the sky so overcast that they could see nothing and consequently lost the tracks. At the most they gained little more than six miles during the day, and this they knew was as much as they could hope to do if they got no help from wind or surfaces. 'We have 7 days' food and should be about 55 miles from One Ton Camp to-night,  $6 \times 7 = 42$ , leaving us 13 miles short of our distance, even if things get no worse.'

Oates too was, Scott felt, getting very near the end.

What we or he will do, God only knows. We discussed the matter after breakfast; he is a brave fine fellow and understands the situation, but he practically asked for advice. Nothing could be said but to urge him to march as long as he could. One satisfactory result to the discussion: I practically ordered Wilson to hand over the means of ending our troubles to us, so that any of us may know how to do so. Wilson had no choice between doing so and our ransacking the medicine case.'

Thus Scott wrote on the 11th, and the next days brought more and more misfortunes with them. A strong northerly wind stopped them altogether on the 13th, and although on the following morning they started

on the 11th] *i.e.* of March, 1912.

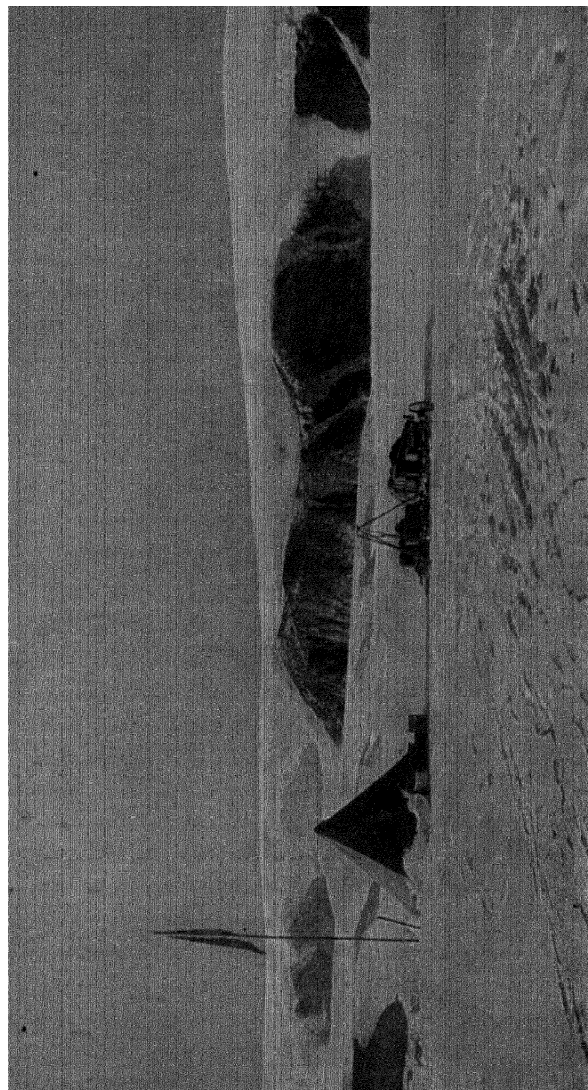
with a favourable breeze, it soon shifted and blew through their wind-clothes and their mits. 'Poor Wilson horribly cold, could not get off ski for some time. Bowers and I practically made camp, and when we got into the tent at last we were all deadly cold. . . . We *must* go on, but now the making of every camp must be more difficult and dangerous. It must be near the end, but a pretty merciful end. . . . I shudder to think what it will be like to-morrow.'

Up to this time, incredible as it seems, Scott had only once spared himself the agony of writing in his journal, so nothing could be more pathetic and significant than the fact that at last he was unable any longer to keep a daily record of this magnificent journey.

'Friday, March 16 or Saturday 17. Lost track of dates, but think the last correct,' his next entry begins, but then under the most unendurable conditions he went on to pay a last and imperishable tribute to his dead companion.

'Tragedy all along the line. At lunch, the day before yesterday, poor Titus Oates said he couldn't go on; he proposed we should leave him in his sleeping-bag. That we could not do, and we induced him to come on, on the afternoon march. In spite of its awful nature for him he struggled on and we made a few miles. At night he was worse and we knew the end had come.

'Should this be found I want these facts recorded. Oates' last thoughts were of his mother, but immediately before he took pride in thinking that his regiment would be pleased with the bold way in which he met his death. We can testify to his bravery. He has borne intense suffering for weeks without complaint, and to the very last was able and willing to discuss outside subjects. He



ANTARCTIC CONDITIONS

did not—would not—give up hope till the very end. He was a brave soul. This was the end. He slept through the night before last, hoping not to wake ; but he woke in the morning—yesterday. It was blowing a blizzard. He said, ‘ I am just going outside and may be some time.’ He went out into the blizzard and we have not seen him since.

‘ I take this opportunity of saying that we have stuck to our sick companions to the last. In case of Edgar Evans, when absolutely out of food and he lay insensible, the safety of the remainder seemed to demand his abandonment, but Providence mercifully removed him at this critical moment. He died a natural death, and we did not leave him till two hours after his death.

‘ We knew that poor Oates was walking to his death, but though we tried to dissuade him, we knew it was the act of a brave man and an English gentleman. We all hope to meet the end with a similar spirit, and assuredly the end is not far.’

#### THE END

‘ *March 29.*—Since the 21st we have had a continuous gale from W.S.W. and S.W. We had fuel to make two cups of tea apiece, and bare food for two days on the 20th. Every day we have been ready to start for our depot 11 miles away, but outside the door of the tent it remains a scene of whirling drift. I do not think we can hope for any better things now. We shall stick it out to the end, but we are getting weaker, of course, and the end cannot be far.’

‘ It seems a pity, but I do not think I can write more.

R. SCOTT.’

Last entry.

‘ For God’s sake look after our people.’

After Cherry-Garrard and Demetri had returned to Hut Point on March 16 without having seen any signs of the Polar party, Atkinson and Keohane made one more desperate effort to find them. When, however, this had been unsuccessful there was nothing more to be done until the winter was over.

During this long and anxious time the leadership of the party devolved upon Atkinson, who under the most trying circumstances showed qualities that are beyond all praise. At the earliest possible moment (October 30) a large party started south. 'On the night of the 11th and morning of the 12th,' Atkinson says, 'after we had marched 11 miles due south of One Ton, we found the tent. It was an object partially snowed up and looking like a cairn. Before it were the ski sticks and in front of them a bamboo which probably was the mast of the sledge. . . .

'Inside the tent were the bodies of Captain Scott, Doctor Wilson, and Lieutenant Bowers. They had pitched their tent well, and it had withstood all the blizzards of an exceptionally hard winter.'

Wilson and Bowers were found in the attitude of sleep, their sleeping-bags closed over their heads as they would naturally close them.

Scott died later. He had thrown back the flaps of his sleeping-bag and opened his coat. The little wallet containing the three note-books was under his shoulder and his arm flung across Wilson.

*From Scott's Last Expedition*, re-told by CHARLES TURLEY.

By kind permission of Mr. John Murray.

## AT THE INTERPRETER'S HOUSE

I SAW also that the Interpreter took him again by the hand, and led him into a pleasant place, where was built a stately palace, beautiful to behold, at the sight of which Christian was greatly delighted ; he saw also upon the top thereof certain persons walking, who were clothed all in gold.

Then said Christian, May we go in thither ?

Then the Interpreter took him, and led him up toward the door of the palace ; and behold, at the door stood a great company of men, as desirous to go in, but durst not. There also sat a man at a little distance from the door, at a table-side, with a book and his ink-horn before him, to take the names of them that should enter therein ; he saw also that in the doorway stood many men in armour to keep it, being resolved to do to the men that would enter what hurt and mischief they could. Now was Christian somewhat in amaze. At last, when every man started back from fear of the armed men, Christian saw a man of a very stout countenance come up to the man that sat there to write, saying, Set down my name, Sir ; the which when he had done, he saw the man draw his sword, and put a helmet upon his head, and rush toward the door upon the armed men, who laid upon him with deadly force ; but the man, not at all discouraged, fell to cutting and hacking most fiercely. So after he had received and given many wounds to those that attempted to keep him out, he cut his way through them all, and pressed forward into the palace, at which there was a pleasant voice heard from those that were

within, even of those that walked upon the top of the palace, saying,

‘ Come in, come in ;  
Eternal glory thou shalt win.’

So he went in, and was clothed with such garments as they. Then Christian smiled, and said, I think verily I know the meaning of this.

JOHN BUNYAN, *The Pilgrim’s Progress, Part I.*

NOTE.—Christian knew the meaning of this easily, for he remembered the text, ‘ The kingdom of heaven suffereth violence, and the violent take it by force.’ (Matt. xi. 12.)

## MR. VALIANT-FOR-TRUTH

THEN they went on ; and just at the palace where Little-faith formerly was robbed, there stood a man with his sword drawn, and his face all over with blood. Then said Mr. Greatheart, Who art thou ? The man made answer, saying, I am one whose name is Valiant-for-truth. I am a pilgrim, and am going to the Celestial City. Now, as I was on my way, there were three men did beset me, and propounded unto me these three things : (1) Whether I would become one of them ; (2) Or go back from whence I came ; (3) Or die upon the place. To the first I answered, I had been a true man for a long season, and therefore it could not be expected that I should now cast in my lot with thieves. Then they demanded what I would say to the second. So I told them the place from whence I came, had I not found incommodity there, I had not forsaken it at all ; but finding it altogether unsuitable to me, and very unprofitable for me, I forsook it for this way. Then they asked me what I said to the third. And I told them,

my life cost far more dear than that I should lightly give it away. Besides, you have nothing to do thus to put things to my choice : wherefore at your peril be it if you meddle. Then these three, to wit, Wild-head, Inconsiderate, and Pragmatic, drew upon me, and I also drew upon them. So we fell to it, one against three, for the space of about three hours. They have left upon me, as you see, some of the marks of their valour, and have also carried away with them some of mine. They are but just now gone ; I suppose they might, as the saying is, hear your horse dash, and so they betook themselves to flight.

GREAT. But here was great odds, three against one.

VALIANT. 'Tis true ; but little or more are nothing to him that has the truth on his side : ' Though an host should encamp against me,' said one, ' my heart shall not fear : though war should rise against me, in this will I be confident.' Besides, said he, I have read in some records, that one man has fought an army : and how many did Samson slay with the jaw-bone of an ass ?

Then said the guide, Why did you not cry out, that some might have come in for your succour ?

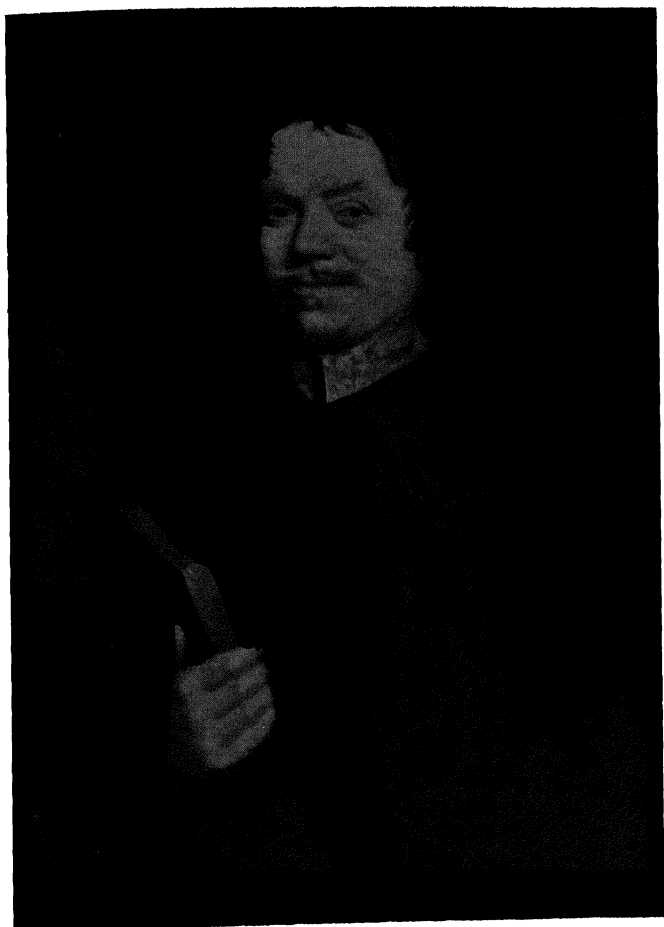
VALIANT. So I did, to my King ; who I knew would hear me, and afford invisible help, and that was sufficient for me.

Then said Mr. Greatheart to Mr. Valiant-for-Truth, Thou has worthily behaved thyself ; let me see thy sword. So he showed it him.

When he had taken it in his hand, and looked thereon a while, he said, Ha ! it is a right Jerusalem blade.

VALIANT. It is so. Let a man have one of these blades, with a hand to wield it and skill to use it, and he may venture upon an angel with it. He need not fear





JOHN BUNYAN

its holding, if he can but tell how to lay on. Its edge will never blunt. It will cut flesh and bones, and soul and spirit, and all.

GREAT. But you fought a great while ; I wonder you was not weary.

VALIANT. I fought till my sword did cleave to my hand ; and then they were joined together as if a sword grew out of my arm, and when the blood ran through my fingers, then I fought with most courage.

GREAT. Thou hast done well ; thou hast resisted unto blood, striving against sin. Thou shalt abide by us, come in and go out with us ; for we are thy companions. Then they took him and washed his wounds, and gave him of what they had, to refresh him : and so they went on together.

Now, as they went on, because Mr. Greatheart was delighted in him (for he loved one greatly that he found to be a man of his hands), and because there were in company them that were feeble and weak, therefore he questioned with him about many things.

JOHN BUNYAN, *The Pilgrim's Progress, Part II.*

## THE VALLEY OF HUMILIATION

GREATHEART. But we will come again to this Valley of Humiliation. It is the best and most fruitful piece of ground in all these parts. It is fat ground, and, as you see, consisteth much in meadows ; and if a man was to come here in the summer time, as we do now, if he knew not anything before thereof, and if he also delighted himself in the sight of his eyes, he might see that which would be delightful to him. Behold, how green this valley is ; also how beautiful with lilies. I

have known many labouring men that have got good estates in this Valley of Humiliation (for ' God resisteth the proud, but giveth grace to the humble ' ) ; for indeed it is a very fruitful soil, and doth bring forth by handfuls. Some also have wished that the next way to their Father's house were here, that they might be troubled no more with either hills or mountains to go over ; but the way is the way, and this is an end.

Now, as they were going along, and talking, they espied a boy feeding his father's sheep. The boy was in very mean clothes, but of a fresh and well-favoured countenance ; and as he sat by himself, he sung. Hark, said Mr. Greatheart, to what the shepherd's boy saith : so they hearkened, and he said,

He that is down, needs fear no fall ;

He that is low, no pride ;

He that is humble, ever shall

Have God to be his guide.

I am content with what I have,

Little be it or much ;

And, Lord, contentment still I crave,

Because thou savest such.

Fulness to such a burden is,

That go on pilgrimage ;

Here little, and hereafter bliss,

Is best from age to age.

Then said the guide, Do you hear him ? I will dare to say, this boy lives a merrier life, and wears more of that herb called heart's-ease in his bosom, than he that is clad in silk and velvet. But we will proceed in our discourse.

In this valley, our Lord formerly had his country-house ;

next] nearest.

merrier] happier.

he loved much to be here : he loved also to walk these meadows, for he found the air was pleasant. Besides, here a man shall be free from the noise, and from the hurryings of this life : all states are full of noise and confusion, only the Valley of Humiliation is that empty and solitary place. Here a man shall not be so let and hindered in his contemplation, as in other places he is apt to be. This is a valley that nobody walks in, but those that love a pilgrim's life. And though Christian had the hard hap to meet here with Apollyon, and to enter with him in a brisk encounter ; yet I must tell you, that in former times men have met with angels here, have found pearls here, and have in this place found the words of life.

JOHN BUNYAN, *The Pilgrim's Progress, Part II.*

### A CHILD'S VISION OF THE WORLD

WILL you see the infancy of this sublime and celestial greatness ? Those pure and virgin apprehensions I had from the womb, and that divine light wherewith I was born are the best unto this day, wherein I can see the Universe. By the Gift of God they attended me into the world, and by His special favour I remember them till now. Verily they seem the greatest gifts His wisdom could bestow, for without them all other gifts had been dead and vain. They are unattainable by book, and therefore I will teach them by experience. Pray for them earnestly : for they will make you angelical, and wholly celestial. Certainly Adam in Paradise had not more sweet and curious apprehensions of the world, than I when I was a child.

let] prevented.

All appeared new, and strange at first, inexpressibly rare and delightful and beautiful. I was a little stranger, which at my entrance into the world was saluted and surrounded with innumerable joys. My knowledge was Divine. I knew by intuition those things which since my Apostasy, I collected again by the highest reason. My very ignorance was advantageous. I seemed as one brought into the Estate of Innocence. All things were spotless and pure and glorious : yea, and infinitely mine, and joyful and precious. I knew not that there were any sins, or complaints or laws. I dreamed not of poverties, contentions, or vices. All tears and quarrels were hidden from mine eyes. Everything was at rest, free and immortal. I knew nothing of sickness or death or rents or exaction, either for tribute or bread. In the absence of these I was entertained like an Angel with the works of God in their splendour and glory, I saw all the peace of Eden ; Heaven and Earth did sing my Creator's praises, and could not make more melody to Adam, than to me. All Time was Eternity, and a perpetual Sabbath. Is it not strange, that an infant should be heir of the whole World, and see those mysteries which the books of the learned never unfold ?

The corn was orient and immortal wheat, which never should be reaped, nor was ever sown. I thought it had stood from everlasting to everlasting. The dust and stones of the street were as precious as gold : the gates were at first the end of the world. The green trees when I saw them first through one of the gates transported and ravished me, their sweetness and unusual beauty made my heart to leap, and almost mad with ecstasy, they were such strange and wonderful things. The Men ! O what venerable and reverend creatures did the

aged seem ! Immortal Cherubims ! And young men glittering and sparkling Angels, and maids strange seraphic pieces of life and beauty. Boys and girls tumbling in the street, and playing, were moving jewels. I knew not that they were born or should die ; But all things abided eternally as they were in their proper places. Eternity was manifest in the Light of the Day, and something infinite behind everything appeared : which talked with my expectation and moved my desire. The city seemed to stand in Eden, or to be built in Heaven. The streets were mine, the temple was mine, the people were mine, their clothes and gold and silver were mine, as much as their sparkling eyes, fair skins, and ruddy faces. The skies were mine, and so were the sun and moon and stars, and all the World was mine ; and I the only spectator and enjoyer of it.

THOMAS TRAHERNE, *Centuries of Meditations*.

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## THE RETREAT

HAPPY those early days, when I  
 Shined in my Angel-infancy !  
 Before I understood this place  
 Appointed for my second race,  
 Or taught my soul to fancy aught  
 But a white celestial thought :  
 When yet I had not walk'd above  
 A mile or two from my first Love,  
 And looking back—at that short space—  
 Could see a glimpse of His bright face :  
 When on some gilded cloud, or flow'r,

My gazing soul would dwell an hour,  
And in those weaker glories spy  
Some shadows of eternity :  
Before I taught my tongue to wound  
My Conscience with a sinful sound,  
Or had the black art to dispense  
A several sin to ev'ry sense,  
But felt through all this fleshly dress  
Bright shoots of everlastingness.  
O how I long to travel back,  
And tread again that ancient track !  
That I might once more reach that plain  
Where first I left my glorious train ;  
From whence th' enlighten'd spirit sees  
That shady City of Palm-trees.  
But ah ! my soul with too much stay  
Is drunk, and staggers in the way !  
Some men a forward motion love,  
But I by backward steps would move ;  
And when this dust falls to the urn,  
In that state I came, return.

HENRY VAUGHAN.

## IV

### THE WANDERINGS OF ODYSSEUS

#### (1) *The Lotus-Eaters*

WHEN Troy had fallen, the Greek kings divided the spoil, and, loading their portions each aboard his squadron, sailed back to their own land. Many strange adventures they encountered, some on the voyage, some on their home-coming ; but none so many or so strange as Odysseus. This is the story, as he told it long after to the King of Phaeacia :

‘ I sailed away from Troy with my twelve ships, and for three days we had a fair wind. But when we would have rounded Cape Malca, where the Greek mainland juts south into the sea, a storm-blast from the North struck us, hurling us out of our course, and wind and current sent us drifting past Cythera. For nine days we drove before the gale, but on the tenth day we made a land-fall ; and it was the land of the Lotus-Eaters, who feed on a flowery food. There we disembarked to draw water ; and when we had made a meal on the strand I sent four of my men up into the country, to spy out what manner of men lived there. They went up until they met the lotus-eating men ; and the Lotus-Eaters offered them no violence, but gave them of the lotus to taste. But whoever of them ate the honeyed fruit of the lotus had no mind any more to return to the



ships or bring me word, but there he would fain abide for ever among the Lotus-Eaters, and browse on the lotus, his home and friends forgot. They wept as I carried them down to the ships by force, and tied them fast below the thwarts. Then I bade my comrades embark with speed, for fear that others might taste the lotus and forget their home-returning. Hastily they took their seats on the thwarts and smote the grey sea with their oars.

FROM HOMER, *Odyssey* IX.

## (2) *The Cyclops*

‘ Sad at heart we rowed away, till we came to the land of the Cyclopes that neither plant nor plough, but the earth of herself yields them every fruit in its season. A lawless race they are, knowing neither kings nor councils ; each one lives in his own cave on a hill-top, ruling over his wives and children and caring nought for his neighbours.

A little wooded isle lies off their land, a desert isle abounding in wild goats ; and in it is a land-locked haven. We made it on a misty moonless night, and knew not where we were till we ran our ships aground ; for we could not see the loom of the land, and we heard no rollers breaking on the beach. Next day we ranged the island, shooting wild goats and feasting on their flesh. But on the day after, my mind being set to go over to the Land of the Cyclopes, I bade the other crews await me there, and, manning my own ship, I crossed the firth. Then I hid my vessel in a cove, and, taking corn in a bag and wine in a goat-skin—sweet, rich wine it was : when the smell of it rose from the mixing-bowl

in sooth it was no joy to abstain !—taking corn and wine, I chose twelve men, the stoutest of my ship's company, and set out along the shore to seek the Cyclops's abode. We found it under a cliff beside the sea. In front was a yard walled with big stones, and within it a wide, deep cave. We entered—there was no man there—and found the cave full of lambs penned all in order, and baskets of cheeses, and pails of whey. My comrades besought me to take some of the lambs and the cheeses and hie back to our ship. But my lordly spirit urged me to await the master's return, for I hoped that he would give me a gift. At sunset he did return, driving his flocks before him ; and at the sight of him we fled in terror to the inmost corner of the cave. For he was no man, but a monster, huge and hairy as a wooded mountain-peak, with a single eye in the middle of his forehead. On his shoulder he carried a faggot of sticks, which he threw rattling into the cave. He left the rams in the yard, but the ewes he drove into the cave ; then closed the cave's mouth with an enormous stone—twenty yoke of oxen could not have stirred it ! Next he penned the ewes all in order, and milked them, putting her lamb to each ; and some of the milk he curdled for cheese, the rest he poured into pails to drink with his supper. Then he blew up the fire to get his supper ready, and by the blaze he spied us crouching in the corner of the cave. ' Ho, strangers,' he said, ' whence come you ? Are you traders or pirates ? ' My heart quaked at his deep voice and monstrous size, but I answered as boldly as I might : ' We are Greeks, my lord, homeward bound from Troy. Agamemnon's men are we, who have sacked the greatest of cities. And we are come in hope that you will give us a stranger's boon and speed us on our

way, revering the blessed gods, and Zeus the lord of suppliants.' 'Stranger,' said the Cyclops, 'you are either a foreigner or a fool. We Cyclopes care nothing for Zeus or the blessed gods, for we are far better than they. But tell me, where have you moored your ship? Was it at the end of the island, or near by?' I perceived his craft, and answered guile with guile: 'Ship, alas! we have none. It was wrecked on the rocks that fringe your island, and we alone escaped destruction.' The Cyclops said never a word, but snatching up two of my men in his hands he dashed out their brains on the floor and devoured them, flesh and bones, like a ravening lion. Then he washed down his cannibal meal with a mighty draught of milk, and stretched himself out to sleep among the ewes. When I saw him asleep I drew my sharp sword and approached, meaning to stab him to the heart; but as I felt for his heart I bethought me that if I killed him there we should be prisoned in the cave for ever; for we could never move that vast stone from the doorway. So all night we crouched in the darkness, weeping.

At dawn the Cyclops awoke, and seizing two more of my fellows he devoured them as before. Then he drove the ewes out to pasture, lightly lifting the doorstone and clapping it to after him as a man claps the lid on a quiver. But now I had devised a plan. There lay in the cave a stake of green olive-wood, as big as a ship's mast, which the Cyclops had brought home to make him a staff when it was dried. From this I cut off a fathom, and pointed it, and hardened the sharp point in the fire. Then we hid it among the dung that lay about the floor, and waited for the giant's return. At nightfall he returned with his flocks before him; but this time he drove the

whole flock into the cave, rams and ewes together. Again he seized two men and tore them limbmeal. But when he had devoured them I came forward with a bowl of wine in my hands, and I said, 'Will not my lord drink after his feast? I brought this wine as a gift for you; but, alas! you are pitiless, and regard not your suppliants.' He took the bowl and drained it at a draught. 'Fill again,' he said, holding it out to me, 'and tell me your name, stranger, that I may give you a fitting gift, for truly this is a marvellous wine. We have grapes of our own in Cyclops-land; but this is a rill of nectar and ambrosia.' I filled again and yet again: three times he drained the deep bowl to the dregs. When I saw that his heart was warm with the wine, 'Sire,' I said, 'you asked me my name, and I will tell it you. No-man is my name: No-man I am called by my father and mother.' The pitiless Cyclops made answer, 'No-man will I eat last of all his company: that is my gift to you!' So saying he threw himself down on his back upon a heap of willow-wands, and in a moment was snorting in sleep.

Then we drew out the olive-wood bar from its hiding-place, and thrust it into the heart of the fire till it was red-hot. And when it was all aglow, and the green wood about to burst into flame, we lifted it and plunged it into the Cyclops's eye. I leaned on the end with all my weight, while two of my men twirled it round in the eye-socket, as shipwrights twirl a drill. The eye-ball hissed around the glowing brand, as a red-hot axe-head hisses when the smith tosses it into his water-trough. With a scream the Cyclops bounded to his feet, and plucked out the brand from his eye-socket and flung it from him, roaring with pain. At the din the other

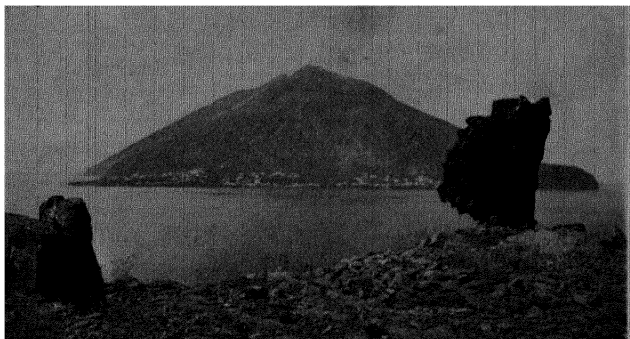
Cyclopes came out of their caves and called, 'What ails you, Polyphemus, that you disturb our slumbers thus, crying through the ambrosial night? Is any man slaying you by force or fraud?' 'Oh, friends!' he cried, 'No-man is slaying me by fraud, not by force am I slain.' 'If no man is doing you violence,' they answered, 'we cannot help you. It is some sickness sent by Zeus: pray to your father Poseidon.' And they returned to their caves. I laughed in my heart to think how my craft had beguiled them.

Groaning and groping with his hands the Cyclops felt round the walls till he came to the cave's mouth. And when morning drew near, that the sheep should go forth to pasture, he moved the doorstone aside, and sat down in the doorway, spreading out his hands. At this I thought of a new device. I took the rams and tied them together, three and three, with osiers from the Cyclops's bed; and under the midmost of each three I bound one of my comrades. There was one lordly ram, the king of the flock, far bigger than all the rest: I gripped his fleece with both my hands and curled up under his belly, twining my fingers in his wool. As the sheep filed past him through the doorway the Cyclops felt along their backs: little he guessed what was under their bellies! When the king of the flock came beneath his hands, weighed down with me and my cunning, 'Dear ram,' he said, 'why lag you behind the rest to-day, you that were wont to be foremost of all, bounding out to the pasture? Are you grieving for your master's eye, which that wicked No-man has blinded? Oh, if you could speak and tell me where he lurks; soon should his brains bespatter the cave, and my heart have some ease!' Then he let the ram go.

A little way from the cave I dropped to the ground, and untied my comrades ; and quickly we drove the rams before us to the cove where our shipmates waited in despair, and quickly we embarked and rowed noiselessly away. But before we were out of earshot of the land, I stood up in the stern and mocked the Cyclops. ‘ Ho, Cyclops ! ’ I shouted, ‘ now you know that it was no weakling whose men you devoured. Monster, Zeus has punished you for that.’ He heard, and plucking off a great pinnacle of rock he hurled it at the sound. It flew over our heads and fell beyond the ship, and the wave that it raised as it plunged into the sea washed the ship back to the land. But I poled her off noiselessly, nodding to my shipmates—for I durst not speak—and they bent to their oars amain. When we had rowed twice as far as before, again I stood up to shout. In vain my comrades sought to restrain me : my haughty heart could not refrain, and I shouted tauntingly, ‘ Cyclops, if men ask who blinded you, say it was Odysseus, the sacker of cities.’ He groaned in answer, ‘ Then the prophet spoke true when he told me that by Odysseus I should be reft of sight. But I looked for some mighty man clothed in strength, not for a dwarf like you. Come back, Odysseus, that I may give you gifts of hospitality ; and perhaps my father Poseidon will heal my eye.’ ‘ Would I could reave you of life,’ I answered, ‘ as surely as Poseidon shall never heal your eye.’ He raised his hands to heaven, and called on Poseidon to curse us ; then, seizing a rock far larger than the former, he hurled it with a giant’s force. It fell a little short of the ship, just missing the helm, and the billow that it raised as it splashed into the sea swept us clean over the firth to that little wooded isle where

my other ships lay waiting. There I sacrificed the lordly ram that had borne me to Zeus, the lord of all ; but, alas ! he accepted not my offering.

From HOMER, *Odyssey* IX.



THE HOME OF AEOLUS

(3) *Aeolus : The Laestrygons : Circe*

‘From the Isle of Woods we sailed away till we came to the Isle Aeolian, the floating isle where Aeolus dwells whom Zeus made keeper of the winds. He entertained us for a whole month, questioning me of my wanderings and my warfare ; and when I desired to go home he sped me kindly on my way. For he sent me a fair west wind for convoy, and all the other blustering winds he gave me in a bag, tied fast with a silver cord, which he bound firmly beneath the thwarts of my vessel. For nine days and nights we flew before that good west wind, and on the tenth day we raised the hills of home. Yes, we saw men tending their fires, so near we were, when suddenly a deep sleep fell upon me. All that voyage I

had held the tiller, and now I was wearied utterly. While I slept my men said one to another, 'What has he in that bag? Precious gifts, I warrant, from Aeolus; silver and gold, forsooth; and *we* coming home empty-handed! Let us see what treasures are in the bag.' So they opened the bag, and all the blustering winds broke out. A whirlblast swooped on my fleet, and hurled it out to sea; and back and back we drove before the raging storm till we came again to the isle of Aeolus. 'What make you here?' he asked in amazement. 'Surely I sent you fairly on your way?' I told him our sorry tale and prayed him to help us once again. But he answered me indignantly, 'Begone from my island, you man of sin. Never more will I help a man whom the gods so manifestly hate'; and he drove me from his door.

So we rowed away sadly, and, labouring at the oar—for now we had no fair breeze to waft us—we came on the seventh day to the land of the Laestrygons, where the outgoings of the morn and even are near together. The other crews ran their ships into a deep haven, ringed with beetling cliffs; but I moored mine to a rock at the entrance. Then I sent three men out to explore the land. They came to a palace, and, entering, found the woman of the house within, a giantess huge as a mountain-peak—they shuddered at the sight. At her call the Laestrygons came running—a host of giants. They chased my men to their ships, and hurled great boulders down on them from the cliffs. The rock-bound haven rang with the din of splintering ships and perishing men. They harpooned my comrades like fishes and bore them off for their cannibal feast. But I slashed my ship's hawser atwain and sprang aboard, and my' shipmates



heaving at the oars drove her furiously out of reach of the land. So I escaped with my own ship's company, but all the rest perished in that harbour, ships and men.

Broken-hearted we rowed away till we made a wooded island, where we cast anchor and threw ourselves down on the strand. For two whole days we lay there, fordone with woe and weariness. But on the third day I roused my men, and dividing them into two bands I sent one out to explore the island. They went up through the woods till they found a clearing in a dingle, and in the midst a house of stone, with wolves and lions prowling round it. The beasts did not set on my men, but frolicked about them, ramping and fawning on them with their long tails, as dogs fawn on their masters at meal-times. From within the Stone House came the clear voice of a woman singing at the loom. They called, and the door was opened by a goddess tall and fair. She brought them in; she set them down; she gave them a posset to drink—wine and honey, sprinkled with cheese and barley-meal; but in it baleful drugs were mixed. When they had drunk, she struck them with a wand, and they were changed into bristling, grunting swine. She drove them into a sty, and threw them down acorns and beech-mast, such husks as wallowing swine do eat.

When my men did not return, I took my sword and my bow, and went up through the woods to seek them. In the woods Hermes met me in the guise of a ruddy stripling. 'Whither away?' he called. 'Fond man, you know not this isle nor its enchantments! This is no other than the Isle Aeaëa, the abode of Circe, mistress of spells. She has turned your men into swine by her

witchery, and do you think to free them unaided ? See, I give you this herb of grace, for a charm against her charms. With this in your bosom you will be proof against her potions. And when she strikes you with her wand, rush in upon her with your sword, and do not let her go till she has sworn to free your comrades.' So saying, he plucked the virtuous herb from the ground and gave it to me, and I put it in my bosom : its root was black, its flower milk-white : moly is its name in heaven. We parted, and I held on my way till I came to the Stone House in the dingle. The goddess met me in the porch ; she brought me in ; she set me down ; she gave me a potion besprent with baleful drugs. When I had drunk it she struck me with her wand and said, ' To the styè with you ! Lair with your fellows ! ' For answer I plucked out my sword and sprang at her. She cowered at my feet, and clasped my knees, crying, ' Who are you that resist my enchantments ? Surely you are that Odysseus, of whom Hermes told me often times, that he would come and withstand my sorceries. Nay, come, let us eat and drink together, that we may trust each other.' She called to her maidens, daughters of the woods and streams. Three of them laid a fair table, while the fourth prepared a warm bath, to melt the weariness out of my limbs. I bathed and donned doublet and cloak ; but I would not sit at meat with her till she had freed my comrades. So she went into the styè, and anointed them with a magic unction ; and immediately the bristles fell from them, and they stood up men again, taller and fairer and younger than before. They wept for joy to see me, till Circe herself was touched with compassion. At her behest I beached my ship and stowed the tackle in a cave, and brought

the rest of my company up to her hall. And there we abode for a year, feasting and making merry together.

From HOMER, *Odyssey* x.

(4) *The Voyage to Hades : The Sirens :  
Scylla : The Wreck*

When the circling year had accomplished its course, longing for home came over me, and I prayed Circe to let me go. ‘Nay, Odysseus,’ she said, ‘You may not yet go home. Ere that may be it is fated that you voyage first to the house of Hades, where the strengthless dead abide, and there inquire of the soul of the prophet Teiresias, who shall show you all that must follow.’ My men wept and wailed when they heard of that dread voyage ; but since it was so ordained, and needs must be, we stepped the mast, and hoisted sail, and bore away into the darkling west. Many a day and night we sailed, till we came to the Ocean Stream that rims the world. And over the Ocean Stream we rowed to the low dim land beyond where abide the strengthless dead. There I dug a pit in the strand, as Circe had taught me, and slaughtered a ram and a black ewe into it, and poured in drink-offerings three—wine, and mead, and fair water—and stood over it with my sword drawn in my hand. Up from the darkness came the feeble ghosts, fain to drink the blood ; but I kept them aloof with my sword’s point. The ghost of my mother came, and I wept bitterly to see her ; yet I would not suffer her to draw near till I should have speech of Teiresias. He came at length out of the mist, and drank the black blood, and told me all my fate even as afterwards it came to pass ; for alone among the dead he keeps his wits steadfast—

the rest are flitting shades. Then I suffered the other ghosts to draw near and drink ; and my mother's ghost drank and told me how she had pined to death for grief at my long absence. Thrice I essayed to embrace her, and thrice she melted from my arms into the shadows. Then I saw Antiope, and Alcmena, and Leda—all the fair daughters of men that had lain with gods ; and I saw Tethys, and Tantalus, and Sisyphus in their torments, the sinners who sinned against high heaven ; and I had speech with Agamemnon and with Achilles ; only Ajax would not come near, though I entreated him, but stalked away indignant into the mists, because the Greeks had preferred me before him when we contended for the arms of Achilles. Then ghosts innumerable came swarming up, and panic seized me lest Persephone should send up the Gorgon's head against me out of the darkness and turn me to stone. So I hastened back to my ship.

Again we crossed the Ocean Stream that rims the world, and sailed on and on into the dawn, till we reached once more the Isle Aeaëa. I told Circe all the prophecy of Teiresias, and she counselled me regarding the perils that still beset my homeward voyage. Then we bade her farewell, and steered at last for home. When we neared the rock of the Sirens, remembering Circe's counsel, I took wax, and kneaded it, and stopped the ears of my shipmates withal ; then I made them bind me firmly to the mast-stead and row hard. As we approached the rock, I saw the lovely Sirens : they held out their arms to me and sang, and their song was sweeter than honey from the honeycomb. Promise of all joy and all knowledge was in that sweet, shrill song. My heart was enraptured, and I called to my comrades



ODYSSEUS PASSING THE SIRENS

to stay ; but they rowed unheeding on. And as we passed the rock I saw that it was full of dead men's bones.

Then we entered the Strait Perilous, where death lies ambushed on either side. High in the right-hand cliff lurks Scylla in her cave, ready to pounce with her six long necks on the voyagers-by ; and on the left Charybdis whirls, who twice a day sucks down the sea into her maw and twice a day spews it up again. I hugged the right-hand shore, for I deemed it better that six of us should perish than the whole crew be cast away. I took my stand in the prow with shield and spear to do battle with the monster ; but I glanced back toward Charybdis, and when I turned there were Scylla's six heads above my ship, and a man in the jaws of each, dangling like a fish on the hook. They screamed to me piteously for help, as she jerked them up into her den. Ah me ! that was the most pitiful sight that I saw in all my wanderings.

Escaped from that Perilous Strait, we rowed on, sad for the loss of our loved comrades, and so came to the Thrinacrian Isle, where the Sun-God keeps his kine. I would have passed it by, for I knew what dangers awaited us there, but my comrades were weary with rowing and constrained me to land ; but first I bound them with a great oath not to touch the sacred kine. Next day a storm arose, and raged for many days. Now so long as our corn lasted, my men kept their oath ; but when we had been storm-stayed a whole month, the corn failed, and hunger gnawed their bellies. Then I went up into the island to pray to the gods for deliverance ; and while I was gone they said one to another, ' Surely of all deaths the cruellest is famine. Better be slain at a stroke than perish inchmeal of hunger ' ; and they slaughtered the

fattest of the kine—I found them feasting on the beach. Word of their impious deed came to the Sun-God, where he sat among the other immortals, and he cried to Zeus in wrath, ‘ Father Zeus, avenge me on these murderers ! Else I will go down to Hell and shine among the dead ! ’ And Zeus promised him vengeance.

On the seventh day thereafter the storm abated, and we bore away from that hateful island. But when we were now out of sight of land, and nothing around us but sea and sky, suddenly a thundercloud stood above our heads ; a black squall struck us ; the mast snapped, braining the steersman as it fell ; and the ship broached to. As she lay wallowing in the breach of the sea, out of the thundercloud Zeus hurled a bolt into the hold : it split the ship, it loosed all the ribs from the keel, and my comrades were swept away in the surge and perished every man. But I clung to the keel, and, clutching at the broken mast, I lashed it to the keel with the back-stay ; and so, bestriding mast and keel, and now oaring with my hands, now drifting with the wind and the stream of the sea, I was thrown at last upon the island of Calypso, that fair goddess, with whom I abode seven years in her hollow caves.’

Such was the tale that Odysseus told to the good King of Phaeacia.

FROM HOMER, *Odyssey* XI., XII.

### (5) *Nausicaa*

At seven years’ end the high gods began to take pity on Odysseus. But yet they durst not help him because of Poseidon, who hated him still for the blinding of his son, the Cyclops Polyphemus. It fell on a day, however,

that Poseidon left Olympus to visit the blameless Aethiopians, who dwell in the uttermost ends of the earth. In his absence Hermes descended to Calypso's isle, and commanded her to let Odysseus go. So Odysseus built him a raft, and made sail on it, hoping at last to reach his native land. But Poseidon, returning from Aethiopia, caught him in mid-sea and wrecked the raft, and Odysseus was spilled into the deep. For two nights and two days he bore up, swimming strongly, till at length from the crest of a billow he descried land. The coast was all sheer cliff, with a great surf breaking at its base. He swam in, seeking for a landing-place ; but a breaker caught him and hurled him on the rocks, then sucked him back bruised and bleeding. Diving through the surf he regained the open sea, and swam along outside the breakers, until at last by good fortune he came to where the line of beetling cliff was broken by the mouth of a river. Gladly he turned from the bitter sea into the limpid river-water, and swimming a little way up stream he dragged himself on to a sloping beach. Then he swooned. His body was all swollen and battered with the buffetings of the surf, and the brine poured in streams from his mouth and nostrils. When he came to himself, he crawled into a thicket, and, raking the dead leaves over him (for he was naked), he fell into a deep sleep. He had landed on the Island of Phaeacia, the realm of King Alcinous.

Next morning, in the palace of Alcinous the Princess Nausicaa came to her father and said, ' Father dear, will you lend me a mule-cart to-day ? For it is time that we had a buck-washing. My brothers are always clamouring for fresh raiment for the dances ; and you need it yourself to go to the council.' The King assented, the



mule-cart was yoked, and the soiled clothes piled into it. The Queen gave the Princess food in a basket and wine in a bottle for the mid-day meal, and olive-oil in a golden flask that she might bathe in the river with her maidens. Then Nausicaa mounted the cart and cracked her whip, and the mules clattered briskly down to the river-mouth, the maidens following. At the river-mouth they unyoked the mules and turned them loose to pasture. Then they heaped the clothes in the washing-troughs, and trod them emulously with their feet till they were all washed clean, then spread them on the shingle to dry. This done, the girls all bathed in the river, and took their mid-day meal; then they played at ball while the clothes were drying. And among them all Nausicaa moved peerless as the huntress Artemis among her wood-maidens. At last in their play one of the girls missed the ball so that it fell into the river. At that they all laughed loud and shrill, and Odysseus awoke.

‘Ay me,’ he said to himself, ‘what land is this that I have lighted on? Surely I heard women’s voices?’ He broke off a leafy bough, and, holding it before him, stepped out of the thicket. Wild as a mountain-lion he looked, with his matted locks and his body all foul with brine. At the sight of him the other girls all fled in panic, but Nausicaa stood her ground like a king’s daughter. The wily Odysseus addressed her from afar, and his words were gentle and cunning: ‘Oh, Queen, are you goddess or mortal? Surely you are none other than Artemis herself. But if you be a mortal maiden, then blessed are your father and mother, and thrice blessed the man who shall win you for his bride; for my eyes never looked on creature so fair. Yet once, in Delos, I saw as fair a thing—a sapling palm that grew by

Apollo's shrine ; straight as a shaft it was—I marvelled at it, as I marvel at you. Oh, Queen, pity a forlorn mariner, cast naked on your shores ! Show me the way to your city, and give me some rag to cover me—the wrap that you brought the linen in will serve.'

Nausicaa answered, 'That, stranger, will I gladly do, for you seem neither knave nor fool.' Then calling to her maidens, 'Ho, girls,' she cried, 'here is nothing to fear. No foes nor pirates can come near our Phaeacia. He is only a poor shipwrecked sailor. Lay here some garments for him, and the cruse of oil ; then get him meat and drink.' Odysseus took the golden cruse and said, 'Now stand apart, ladies, I pray you ; for I should think shame to bathe before fair-tressed maidens.' They stood apart, and he waded into the river. With its limpid waters he washed away the brine that encrusted his body, and rinsed the salt sea-foam out of his hair. Then he rubbed himself well with the oil, and donned the doublet and mantle which the maidens had laid ready for him, and anon stepped out of his thicket again. I vow he was a stalwart man and tall, and on his head the dark locks clustered like the hyacinth flower. Nausicaa turned to her maids and said, 'Truly, girls, I thought him at first but an ill-favoured person, but now he looks like a god from heaven. Would I might have his like for a husband ! Perhaps we may win him to bide here among us.'

But to Odysseus she said, 'Stranger, the sun is westering, and it is time that we were gone. Do you follow with the cart till we come to the city-gate, but no farther. For my father's palace lies beyond the shipyards, and if you entered along with us some saucy shipwright might say, "Ho, ho ! What handsome man is this that

Nausicaa is bringing home ? Some deserter, belike, that she has wooed to be her bridegroom, or one of the high gods come down to wed her in answer to her prayers. And in good time, forsooth, since she scorns the noble lads of Phaeacia !” So might some low fellow say ; and ‘indeed I myself would blame any unwed maid that consorted with stranger men. Stay behind, therefore, till we have passed the gate, and then come on alone to my father’s palace—any child will direct you.’

So said, so done. The clothes were folded, the cart was filled, and the mules trotted briskly back to the town, Odysseus following with the maidens. But when they drew near the town, he waited out of sight until they had passed the gate, then went on alone till he came to Alcinous’s palace. Entering, he crossed the great hall quickly to where the Queen sat by the hearth, and kneeling put himself in her mercy. The noble Phacacians entertained him hospitably for two days, while he told them of his wanderings and his warfare. On the third night they set him aboard a magic ship, which wafted him home while he slept. He awoke to find himself in Ithaca.

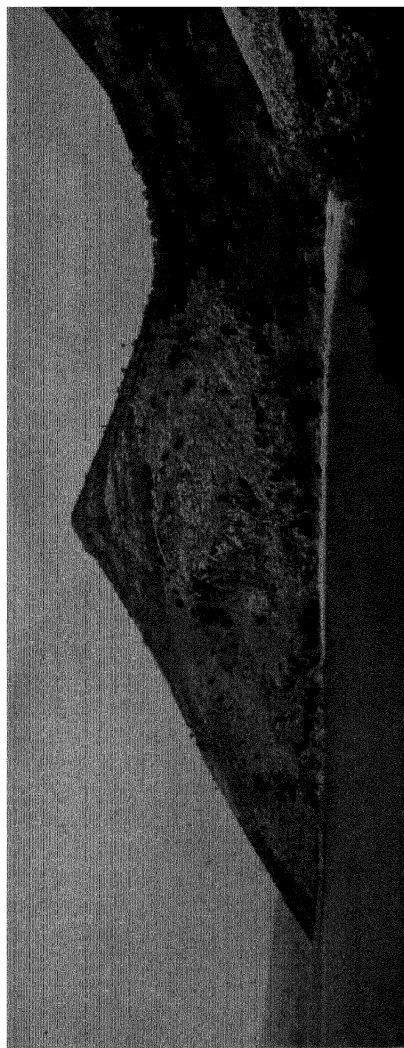
FROM HOMER, *Odyssey* VI.

### (6) *The Return of Odysseus*

Thus in the twentieth year Odysseus reached his native land, ‘late, alone, on the ship of strangers,’ even as Teiresias had foretold. But he did not go straight home ; for Athene warned him that his house was full of arrogant nobles, who wooed his wife, the chaste Penelope, and would not depart, but continued there, wasting his substance in riot and revelry. Therefore he disguised

himself as an old beggar-man, and, avoiding the palace, made his way to a lonesome homestead, where a trusty swineherd kept his swine. Here he met his son Telemachus, now grown to manhood, and revealed himself to him ; and together they plotted the slaughter of the suitors. Telemachus went home first, to remove all armour and weapons from the great hall ; and next day Odysseus followed in the swineherd's guidance. As they approached the house, a dog that lay before the door raised his head and pricked up his ears. It was the hound Argus, that Odysseus had bred before he went to the wars ; but now he was very old, and lay among the dung neglected and verminous. Yet after twenty years he knew his master in the beggar's rags ; he dropped his ears and wagged his tail, and, striving to crawl to his master, sank dead for joy at his feet. Odysseus wiped away a tear as he crossed the threshold : no other creature within his palace recognized their lord returned. He entered his own hall, and sat down humbly by the door, like a beggar waiting for broken meats.

Now Penelope the Queen had long held her suitors at bay by a ruse : she put a great web in her loom, and vowed that she would not wed again until she had woven a winding-sheet for her father-in-law. Every day she wove at her web, and every night, while the household slept, she undid what she had woven. At last the suitors set a watch upon her, and discovered her ruse ; and now the day was come that her choice must be made. There hung in her treasure-chamber a mighty bow, an heirloom which Odysseus prized so highly that he would not take it with him to Troy. She then took this bow with its quiver, and descended to the great hall, followed by a serving-man who bore twelve axes with open-work heads



THE SITE OF THE CASTLE OF ODYSSEUS

of iron. She bade Telemachus set up these axes in a row ; and when he had dug a trench in the earthen floor of the hall, and set up the axes all level and straight, she stood on the dais and spoke to her haughty suitors : ‘ Whosoever can string this bow and send an arrow through these twelve axe-heads, him will I wed and with him will I go.’

Odysseus knew that his hour was come. While the suitors one after another strove in vain to bend the bow, he slipped out of the hall, and revealed himself to the neatherd and the swineherd, whom alone he had found true to him among his thralls. And when they had barred the gate of the yard, so that no rescue should come from without, he re-entered the hall with his two herdsmen, and asked Telemachus to let him attempt the feat. The proud suitors stormed at him for a drunken vagrant ; but Telemachus outfaced them all, and said boldly, ‘ Mother, return to your chamber and mind your distaff. And you, swineherd, give the bow to the stranger. For I will be master in my own house, and let me see who dare say me nay ! ’ So Penelope withdrew to her chamber, marvelling at her masterful son ; and, amid threats and jeering laughter, Odysseus took the bow and quiver from the swineherd’s hands. He thumbed the bow all over, and peered at the horn-tips, to see if they were worm-eaten. A hush fell on the suitors as they marked how deftly he handled the bow and how knowingly he eyed it. Then he bent the great bow without effort, and slipped the loop over the horn-tips, and twanged the string till it sang like a swallow. The countenances of the suitors were changed as he laid an arrow on the bridge of the bow, and from the bench where he sat sent it whizzing through the axe-heads.

‘Telemachus,’ he said, ‘your guest has not disgraced you. The hour is come. Let us give these lords their supper, and then to the song and the dance.’ At the word Telemachus sprang to his side with sword and spear. Flinging off his rags, Odysseus leapt on to the threshold of the hall, and crying, ‘That match is over—now for another mark!’ he pierced the haughtiest of the suitors through the throat. The rest sprang up in panic, and rushed about the hall, looking in vain for shields and weapons, while from the stone threshold Odysseus rained his arrows among them till he slew them all.

Thus did Odysseus take vengeance on the suitors of his wife, and made himself master in his own house. But his wanderings were not yet over. He had one more journey to go before he could appease Poseidon. For all his troubles had begun from the day when he blinded Poseidon’s son, the Cyclops Polyphemus. Therefore the prophet Teiresias had warned him to appease the sea-god’s anger by establishing his worship in a land where it was yet unknown. To this end he must journey till he came to a people that knew not the sea, nor the use of salt, nor ships, nor oars. So Odysseus crossed over to the mainland, and, taking an oar on his shoulder, journeyed inland many days. At last he met a man in the way who said to him, ‘Stranger, why do you carry a winnowing-fan on your shoulder?’ Then Odysseus perceived that he had come to a people who knew not the sea, nor sails, nor oars. So he planted his oar there in the earth, and offered sacrifice to Poseidon—a bull, a boar, and a ram. Then at last he returned to Ithaca, and ruled over his people in peace, till death came to him in a green old age, a gentle death from the sea.

From HOMER, *Odyssey* XIII.-XXIV.

## THE LOTUS-EATERS

'COURAGE !' he said, and pointed toward the land,  
 'This mounting wave will roll us shoreward soon.'  
 In the afternoon they came unto a land  
 In which it seemed always afternoon.  
 All round the coast the languid air did swoon,  
 Breathing like one that hath a weary dream.  
 Full-faced above the valley stood the moon ;  
 And like a downward smoke, the slender stream  
 Along the cliff to fall and pause and fall did seem.

A land of streams ! some, like a downward smoke,  
 Slow-dropping veils of thinnest lawn, did go ;  
 And some thro' wavering lights and shadows broke,  
 Rolling a slumbrous sheet of foam below.  
 They saw the gleaming river seaward flow  
 From the inner land : far off, three mountain-tops,  
 Three silent pinnacles of aged snow,  
 Stood sunset-flush'd : and, dew'd with showery drops,  
 Up-clomb the shadowy pine above the woven copse.

The charmed sunset linger'd low adown  
 In the red West : thro' mountain clefts the dale  
 Was seen far inland, and the yellow down  
 Border'd with palm, and many a winding vale  
 And meadow, set with slender galingale ;  
 A land where all things always seem'd the same !  
 And round about the keel with faces pale,  
 Dark faces pale against that rosy flame,  
 The mild-eyed melancholy Lotus-eaters came.

Branches they bore of that enchanted stem,  
 Laden with flower and fruit, whereof they gave



To each, but whoso did receive of them,  
 And taste, to him the gushing of the wave  
 Far far away did seem to mourn and rave  
 On alien shores ; and if his fellow spake,  
 His voice was thin, as voices from the grave ;  
 And deep-asleep he seem'd yet all awake,  
 And music in his ears his beating heart did make.

They sat them down upon the yellow sand,  
 Between the sun and moon upon the shore ;  
 And sweet it was to dream of Fatherland,  
 Of child, and wife, and slave ; but evermore  
 Most weary seem'd the sea, weary the oar,  
 Weary the wandering fields of barren foam.  
 Then some one said, ' We will return no more ' ;  
 And all at once they sang, ' Our island home  
 Is far beyond the wave ; we will no longer roam.'

ALFRED, LORD TENNYSON.

## THE FIRST CIRCUMNAVIGATION OF AFRICA

LIBYA has been proved to be sea-girt, except where it borders on Asia. The fact was first demonstrated by Pharaoh Necho, who, after cutting the canal from the Nile to the Arabian Gulf, sent out certain Phœnician vessels with orders to return through the Pillars of Hercules to the Northern Sea and so to Egypt. The Phœnicians accordingly set out from the Red Sea and sailed away over the South Sea. When autumn came,

Libya] Africa.

Necho] King of Egypt, c. 650 B.C., time of Nebuchadnezzar.

Arabian Gulf] Gulf of Suez.

Pillars of Hercules] Capes Gibraltar and Tarifa.

Northern Sea] Mediterranean.

they would go ashore wherever they chanced to be, and sow the land ; then, having harvested the corn, they would put out to sea again. And thus, when two years had passed, in the third year they doubled the Pillars of Hercules and arrived again in Egypt. And they reported a thing which I cannot believe, though others may, namely, that in their circumnavigation of Libya they had the sun on their right hand ! Thus was Libya first discovered to be sea-girt, a fact which the Carthaginians afterwards confirmed.

As for Sataspes the Persian, he did *not* circumnavigate Libya, though he was sent out for that very purpose, but, taking fright at the length of the voyage and the desolation of the land, he turned back without having accomplished the task which his mother had laid upon him. This Sataspes, you must know, had been condemned to death by King Xerxes for offering violence to a noble lady of Persia. But his mother, who was Xerxes's father's sister, begged his life, promising to inflict on him a severer punishment than the King ; which was, to sail round Libya until, having circumnavigated it, he should return to the Arabian Gulf. To these terms Xerxes agreed. Sataspes accordingly procured a ship of Egypt, and sailed to the Pillars of Hercules ; and, having passed the Pillars, he rounded Cape Soloeis and sailed on towards the South. But when he had traversed much sea in many months, and perceived that more and yet more still lay before him, he turned about and sailed back to Egypt. When he came before King Xerxes he reported that at the farthest point of his voyage he was coasting along by a land of Dwarfs, who clothed themselves in palm-leaves, but forsook their towns and fled to the hills

Cape Soloeis] Cape Cantin in Morocco.

whenever he put in to shore, though his men did them no injury beyond taking food from the towns they entered. And the cause, he said, why he had not sailed completely round Libya was this—that the ship stuck fast and could proceed no farther. Xerxes, however, disbelieved his tale, and, since he had not accomplished the task enjoined, put him to the death to which he had formerly been sentenced.

HERODOTUS, Bk. IV. cc. 42, 43.

NOTES.—The Phœnicians would have the sun 'on their right' as they rounded the south of Africa. The dwarfs whom Sataspes saw would be dwarfs of the Congo. Did his ship 'stick fast' because of the Doldrums? Or had he encountered a great patch of floating weed, like the Sargasso Sea?

## ST. PAUL'S VOYAGE

AND when it was determined that we should sail into Italy, they delivered Paul and certain other prisoners unto *one* named Julius, a centurion of Augustus' band.

2. And entering into a ship of Adramyttium, we launched, meaning to sail by the coasts of Asia; *one* Aristarchus, a Macedonian of Thessalonica, being with us.

3. And the next *day* we touched at Sidon. And Julius courteously entreated Paul, and gave *him* liberty to go unto his friends to refresh himself.

4. And when we had launched from thence, we sailed under Cyprus, because the winds were contrary.

5. And when we had sailed over the sea of Cilicia and Pamphylia, we came to Myra, *a city* of Lycia.

6. And there the centurion found a ship of Alexandria sailing into Italy; and he put us therein.

7. And when we had sailed slowly many days, and scarce were come over against Cnidus, the wind not suffering us, we sailed under Crete, over against Salome;

8. And, hardly passing it, came unto a place which is called The fair havens ; nigh whereunto was the city of Lasea.

9. Now when much time was spent, and when sailing was now dangerous, because the fast was now already past, Paul admonished *them*.

10. And said unto them, Sirs, I perceive that this voyage will be with hurt and much damage, not only of the lading and ship, but also of our lives.

11. Nevertheless the centurion believed the master and the owner of the ship, more than those things which were spoken by Paul.

12. And because the haven was not commodious to winter in, the more part advised to depart thence also, if by any means they might attain to Phenice, *and there* to winter ; *which is* an haven of Crete, and lieth toward the south west and north west.

13. And when the south wind blew softly, supposing that they had obtained *their* purpose, loosing *thence*, they sailed close by Crete.

14. But not long after there rose against it a tempestuous wind, called Euroclydon.

15. And when the ship was caught, and could not bear up into the wind, we let *her* drive.

16. And running under a certain island which is called Claudia, we had much work to come by the boat :

17. Which when they had taken up, they used helps, undergirding the ship ; and, fearing lest they should fall into the quicksands, strake sail, and so were driven.

18. And we being exceedingly tossed by the tempest, the next *day*, they lightened the ship ;

helps] means of protection against foundering. For 'undergirding' sailors would now say 'frapping.'

19. And the third *day* we cast out with our own hands the tackling of the ship.

20. And when neither sun nor stars in many days appeared, and no small tempest lay on *us*, all hope that we should be saved was then taken away.

21. But after long abstinence Paul stood forth in the midst of them, and said, Sirs, ye should have hearkened unto me, and not have loosed from Crete, and to have gained this harm and loss.

22. And now I exhort you to be of good cheer ; for there shall be no loss of *any man's* life among you, but of the ship.

23. For there stood by me this night the angel of God, whose I am, and whom I serve,

24. Saying, Fear not, Paul ; thou must be brought before Cæsar : and, lo, God hath given thee all them that sail with thee.

25. Wherefore, sirs, be of good cheer : for I believe God, that it shall be even as it was told me.

26. Howbeit we must be cast upon a certain island.

27. But when the fourteenth night was come, as we were driven up and down in Adria, about midnight the shipmen deemed that they drew near to some country ;

28. And sounded, and found *it* twenty fathoms : and when they had gone a little further, they sounded again, and found *it* fifteen fathoms.

29. Then fearing lest we should have fallen upon rocks, they cast four anchors out of the stern, and wished for the day.

30. And as the shipmen were about to flee out of the ship, when they had let down the boat into the sea, under colour as though they would have cast anchors out of the foreship,

31. Paul said to the centurion and to the soldiers, Except these abide in the ship, ye cannot be saved.

32. Then the soldiers cut off the ropes of the boat, and let her fall off.

33. And while the day was coming on, Paul besought *them* all to take meat, saying, This day is the fourteenth day that ye have tarried and continued fasting, having taken nothing.

34. Wherefore I pray you to take *some* meat ; for this is for your health : for there shall not an hair fall from the head of any of you.

35. And when he had thus spoken, he took bread, and gave thanks to God in the presence of them all : and when he had broken *it*, he began to eat.

36. Then they were all of good cheer, and they also took *some* meat.

37. And we were all in the ship two hundred threescore and sixteen souls.

38. And when they had eaten enough, they lightened the ship, and cast out the wheat into the sea.

39. And when it was day, they knew not the land : but they discovered a certain creek with a shore, into the which they were minded, if it were possible, to thrust in the ship.

40. And when they had taken up the anchors, they committed *themselves* unto the sea, and loosed the rudder bands, and hoisted up the mainsail to the wind, and made toward shore.

41. And falling into a place where two seas met, they ran the ship aground ; and the forepart stuck fast, and remained unmoveable, but the hinder part was broken with the violence of the waves.

42. And the soldiers' counsel was to kill the prisoners, lest any of them should swim out, and escape.

43. But the centurion, willing to save Paul, kept them from *their* purpose ; and commanded that they which could swim should cast *themselves* first *into the sea*, and get to land :

44. And the rest, some on boards, and some on *broken pieces* of the ship. And so it came to pass, that they escaped all safe to land.

*Acts of the Apostles, c. xxvii.*

## THE NORSE DISCOVER AMERICA

It is to these same spirited chroniclers that we are indebted for the preservation of two of the most remarkable facts in the history of the world : the colonization of Greenland by Europeans in the tenth century, and the discovery of America by the Icelanders at the commencement of the eleventh.

The story is rather curious.

Shortly after the arrival of the first settlers in Iceland, a mariner of the name of Eric the Red discovers a country away to the west, which, in consequence of its fruitful appearance, he calls Greenland. In the course of a few years the new land has become so thickly inhabited that it is necessary to erect the district into an episcopal see ; and at last, in 1448, we have a brief of Pope Nicolas 'granting to his beloved children of Greenland, in consideration of their having erected many sacred buildings and a splendid cathedral'—a new bishop and a fresh supply of priests. At the commencement, however, of the next century, this colony of Greenland, with its bishops, priests, and people, its one hundred and ninety townships, its cathedral, its churches, its monasteries, suddenly fades into oblivion, like the fabric of a dream.

The memory of its existence perishes, and the allusions made to it in the old Scandinavian Sagas gradually come to be considered poetical inventions or pious frauds. At last, after a lapse of four hundred years, some Danish missionaries set out to convert the Esquimaux; and there, far within Davis' Straits, are discovered vestiges of the ancient settlement—remains of houses, paths, walls, churches, tombstones, and inscriptions.<sup>1</sup>

What could have been the calamity which suddenly annihilated this Christian people it is impossible to say; whether they were massacred by some warlike tribe of natives, or swept off to the last man by the terrible pestilence of 1349, called 'The Black Death,' or—most horrible conjecture of all—beleaguered by vast masses of ice setting down from the Polar Sea along the eastern coast of Greenland, and thus miserably frozen—we are never likely to know—so utterly did they perish, so mysterious has been their doom.

On the other hand, certain traditions, with regard to the discovery of a vast continent by their forefathers away in the south-west, seem never to have entirely died out of the memory of the Icelanders; and in the month of February, 1477, there arrives at Reykjavik, in a bark belonging to the port of Bristol, a certain long-visaged,

<sup>1</sup> On one tombstone there was written in Runic, 'Vigdis M. D. Hvilir; Glwde Gude Sal Hennar.' 'Vigdessa rests here; God gladden her soul.' But the most interesting of these inscriptions is one discovered, in 1824, in an island in Baffin's Bay, in latitude 72° 55', as it shows how boldly these Northmen must have penetrated into regions supposed to have been unvisited by man before the voyages of our modern navigators: 'Erling Sighvatson and Biomo Thordardson, and Eindrid Oddson, on Saturday before Ascension-week, raised these marks and cleared ground, 1185'. This date of Ascension Week implies that these three men wintered here, which must lead us to imagine that at that time, seven hundred years ago, the climate was less inclement than it is now.



grey-eyed Genoese mariner, who was observed to take an amazing interest in hunting up whatever was known on the subject. Whether Columbus—for it was no less a personage than he—really learned anything to confirm him in his noble resolutions is uncertain ; but we have still extant an historical manuscript, written at all events before the year 1395, that is to say, one hundred years prior to Columbus's voyage, which contains a minute account of how a certain person named Lief, while sailing over to Greenland, was driven out of his course by contrary winds, until he found himself off an extensive and unknown coast, which increased in beauty and fertility as he descended south, and how, in consequence of the representation Lief made on his return, successive expeditions were undertaken in the same direction. On two occasions their wives seem to have accompanied the adventurers ; of one ship's company the skipper was a lady ; while two parties even wintered in the new land, built houses, and prepared to colonize. For some reason, however, the intention was abandoned ; and in process of time these early voyages came to be considered as apocryphal as the Phœnician circumnavigation of Africa in the time of Pharaoh Necho.

It is quite uncertain how low a latitude in America the Northmen ever reached ; but from the description given of the scenery, products, and inhabitants—from the mildness of the weather—and from the length of the day on the 21st of December—it is conjectured that they could not have descended much farther than Newfoundland, Nova Scotia, or, at most, the coast of Massachusetts.

MARQUIS OF DUFFERIN, *Letters from High Latitudes.*

## COLUMBUS DISCOVERS AMERICA, 1492

BUT after all the efforts of Isabella and Columbus, the armament was not suitable, either to the dignity of the nation by which it was equipped, or to the importance of the service for which it was destined. It consisted of three vessels. The largest, a ship of no considerable burden, was commanded by Columbus, as admiral, who gave it the name of 'Santa Maria' out of respect for the blessed virgin, whom he honoured with singular devotion. Of the second, called the 'Pinta,' Martin Pinzon was captain, and his brother Francis pilot. The third, named the 'Nina,' was under the command of Vincent Yanez Pinzon. These two were light vessels, hardly superior in burden or force to large boats. The squadron, if it merits that name, was victualled for twelve months, and had on board ninety men, mostly sailors, together with a few adventurers, who followed the fortune of Columbus, and some gentlemen of Isabella's court, whom she appointed to accompany him. Though the expense of the undertaking was one of the circumstances which chiefly alarmed the court of Spain, and retarded so long the negotiation with Columbus, the sum employed in fitting out this squadron did not exceed four thousand pounds.

As the art of ship-building in the fifteenth century was extremely rude, and the bulk of vessels was accommodated to the short and easy voyages along the coast which they were accustomed to perform, it is a proof of the courage as well as enterprising genius of Columbus, that he ventured, with a fleet so unfit for a distant navigation, to explore unknown seas, where he had no chart to guide him, no knowledge of the tides and currents, and no

experience of the dangers to which he might be exposed. He pushed forward the preparations with such ardour, and was seconded so effectually by the persons to whom Isabella committed the superintendence of this business, that every thing was soon in readiness for the voyage. But as Columbus was deeply impressed with sentiments of religion, he would not set out upon an expedition so arduous, and of which one great object was to extend the knowledge of the Christian faith, without imploring publicly the guidance and protection of heaven. With this view, he, together with all the persons under his command, marched in solemn procession to the monastery of Rabida. After confessing their sins, and obtaining absolution, they received the holy sacrament from the hands of the guardian, who joined his prayers to theirs, for the success of an enterprise which he so zealously patronised.

Next morning, being Friday the third day of August, in the year one thousand four hundred and ninety-two, Columbus set sail, a little before sunrise, in presence of a vast crowd of spectators, who sent up their supplications to heaven for the prosperous issue of the voyage, which they wished rather than expected. Columbus steered directly for the Canary islands, and arrived there without any occurrence that would have deserved notice on any other occasion. But, in a voyage of such expectation and importance, every circumstance was the object of attention. The rudder of the *Pinta* broke loose the day after she left the harbour ; and that accident alarmed the crew, no less superstitious than unskilful, as a certain omen of the unfortunate destiny of the expedition. Even in the short run to the Canaries, the ships were found to be so crazy and ill-appointed, as to be very improper for a navigation which was expected to be both long and

dangerous. Columbus refitted them, however, to the best of his power ; and having supplied himself with fresh provisions, he took his departure from Gomera, one of the most westerly of the Canary islands, on the sixth day of September.

Here the voyage of discovery may properly be said to begin ; for Columbus, holding his course due west, left immediately the usual track of navigation, and stretched into unfrequented and unknown seas. The first day, as it was very calm, he made but little way ; but on the second, he lost sight of the Canaries ; and many of the sailors, dejected already and dismayed, when they contemplated the boldness of the undertaking, began to beat their breasts, and to shed tears, as if they were never more to behold land. Columbus comforted them with assurances of success, and the prospect of vast wealth, in those opulent regions whither he was conducting them. This early discovery of the spirit of his followers taught Columbus that he must prepare to struggle not only with the unavoidable difficulties which might be expected from the nature of his undertaking, but with such as were likely to arise from the ignorance and timidity of the people under his command ; and he perceived that the art of governing the minds of men would be no less requisite for accomplishing the discoveries which he had in view, than naval skill and undaunted courage. Happily for himself, and for the country by which he was employed, he joined to the ardent temper and inventive genius of a projector, a thorough knowledge of mankind, an insinuating address, a patient perseverance in executing any plan, the perfect government of his own passions, and the talent of acquiring an ascendancy over those of other men. All these qualities, which formed him for

command, were accompanied with that superior knowledge of his profession which begets confidence in times of difficulty and danger. To unskilful Spanish sailors, accustomed only to coasting voyages in the Mediterranean, the maritime science of Columbus, the fruit of thirty years' experience, improved by an acquaintance with all the inventions of the Portuguese, appeared immense. As soon as they put to sea, he regulated every thing by his sole authority ; he superintended the execution of every order ; and allowing himself only a few hours for sleep, he was at all other times upon deck. As his course lay through seas which had not formerly been visited, the sounding-line, or instruments for observation, were continually in his hands. After the example of the Portuguese discoverers, he attended to the motion of tides and currents, watched the flight of birds, the appearance of fishes, of sea-weeds, and of every thing that floated on the waves, and entered every occurrence with a minute exactness, in the journal which he kept. As the length of the voyage could not fail of alarming sailors habituated only to short excursions, Columbus endeavoured to conceal from them the 'real progress which they made. With this view, though they ran eighteen leagues on the second day after they left Gomera, he gave out that they had advanced only fifteen, and he uniformly employed the same artifice of reckoning short during the whole voyage. By the fourteenth of September, the fleet was above two hundred leagues to the west of the Canary isles, at a greater distance from land than any Spaniard had been before that time. There they were struck with an appearance no less astonishing than new. They observed that the magnetic needle in their compasses did not point exactly to the pole star,

but varied towards the west ; and as they proceeded, this variation increased. This appearance, which is now familiar, though it still remains one of the mysteries of nature, filled the companions of Columbus with terror. They were now in a boundless and unknown ocean, far from the usual course of navigation ; nature itself seemed to be altered, and the only guide which they had left was about to fail them. Columbus, with no less quickness than ingenuity, invented a reason for this appearance, which, though it did not satisfy himself, seemed so plausible to them, that it dispelled their fears, or silenced their murmurs.

He still continued to steer due west, nearly in the same latitude with the Canary islands. In this course he came within the sphere of the trade wind, which blows invariably from east to west, between the tropics and a few degrees beyond them. He advanced before this steady gale with such uniform rapidity, that it was seldom necessary to shift a sail. When about four hundred leagues to the west of the Canaries, he found the sea so covered with weeds, that it resembled a meadow of vast extent, and in some places they were so thick, as to retard the motion of the vessels. This strange appearance occasioned new alarm and disquiet. The sailors imagined that they were now arrived at the utmost boundary of the navigable ocean ; that these floating weeds would obstruct their farther progress, and concealed dangerous rocks, or some large tract of land, which had sunk they knew not how, in that place. Columbus endeavoured to persuade them that what had alarmed ought rather to have encouraged them, and was to be considered as a sign of approaching land. At the same time a brisk gale arose, and carried them forward.

Several birds were seen hovering about the ship, and directed their flight towards the west. The desponding crew resumed some degree of spirit, and began to entertain fresh hopes.

Upon the first of October they were, according to the admiral's reckoning, seven hundred and seventy leagues to the west of the Canaries ; but, lest his men should be intimidated by the prodigious length of the navigation, he gave out that they had proceeded only five hundred and eighty-four leagues ; and, fortunately for Columbus, neither his own pilot nor those of the other ships had skill sufficient to correct this error, and discover the deceit. They had now been above three weeks at sea ; they had proceeded far beyond what former navigators had attempted or deemed possible ; all their prognostics of discovery, drawn from the flight of birds and other circumstances, had proved fallacious ; the appearance of land, with which their own credulity or the artifice of their commander had, from time to time, flattered and amused them, had been altogether illusive, and their prospect of success seemed now to be as distant as ever. These reflections occurred often to men, who had no other occupation or object than to reason and discourse concerning the intention and circumstances of their expedition. They made impression, at first, upon the ignorant and timid, and extending by degrees to such as were better informed or more resolute, the contagion spread at length from ship to ship. From secret whispers or murmurings, they proceeded to open cabals and public complaints. They taxed their sovereign with inconsiderate credulity, in paying such regard to the vain promises and rash conjectures of an indigent foreigner, as to hazard the lives of so many of her own subjects in

prosecuting a chimerical scheme. They affirmed that they had fully performed their duty, by venturing so far in an unknown and hopeless course, and could incur no blame for refusing to follow any longer a desperate adventurer to certain destruction. They contended that it was necessary to think of returning to Spain, while their crazy vessels were still in a condition to keep the sea, but expressed their fears that the attempt would prove vain, as the wind, which had hitherto been so favourable to their course, must render it impossible to sail in the opposite direction. All agreed that Columbus should be compelled by force to adopt a measure on which their common safety depended. Some of the more audacious proposed, as the most expeditious and certain method of getting rid at once of his remonstrances, to throw him into the sea, being persuaded that, upon their return to Spain, the death of an unsuccessful projector would excite little concern, and be inquired into with no curiosity.

Columbus was fully sensible of his perilous situation. He had observed with great uneasiness the fatal operation of ignorance and of fear in producing disaffection among his crew and saw that it was now ready to burst out into open mutiny. He retained, however, perfect presence of mind. He affected to seem ignorant of their machinations. Notwithstanding the agitation and solicitude of his own mind he appeared with a cheerful countenance, like a man satisfied with the progress he had made, and confident of success. Sometimes he employed all the arts of insinuation, to soothe his men. Sometimes he endeavoured to work upon their ambition or avarice, by magnificent descriptions of the fame and wealth which they were about to acquire. On other



occasions, he assumed a tone of authority, and threatened them with vengeance from their sovereign, if by their dastardly behaviour they should defeat this noble effort to promote the glory of God, and to exalt the Spanish name above that of every other nation. Even with seditious sailors, the words of a man whom they had been accustomed to reverence, were weighty and persuasive, and not only restrained them from those violent excesses, which they meditated, but prevailed with them to accompany their admiral for some time longer.

• As they proceeded the indications of approaching land seemed to be more certain, and excited hope in proportion. The birds began to appear in flocks, making towards the south-west. Columbus, in imitation of the Portuguese navigators, who had been guided in several of their discoveries by the motion of birds, altered his course from due west towards that quarter whither they pointed their flight. But after holding on for several days in this new direction, without any better success than formerly, having seen no object, during thirty days, but the sea and the sky, the hopes of his companions subsided faster than they had risen ; their fears revived with additional force ; impatience, rage and despair appeared in every countenance. All sense of subordination was lost ; the officers, who had hitherto concurred with Columbus in opinion, and supported his authority, now took part with the private men ; they assembled tumultuously on the deck, expostulated with their commander, mingled threats with their expostulations, and required him instantly to tack about and to return to Europe. Columbus perceived that it would be of no avail to have recourse to any of his former arts, which having been tried so often had lost their effect ; and

that it was impossible to rekindle any zeal for the success of the expedition among men, in whose breasts fear had extinguished every generous sentiment. He saw that it was no less vain to think of employing either gentle or severe measures to quell a mutiny so general and so violent. It was necessary, on all these accounts, to soothe passions which he could no longer command, and to give way to a torrent too impetuous to be checked. He promised solemnly to his men that he would comply with their request, provided they would accompany him, and obey his command for three days longer, and if, during that time, land were not discovered, he would then abandon the enterprise, and direct his course towards Spain.

Enraged as the sailors were, and impatient to turn their faces again towards their native country, this proposition did not appear to them unreasonable. Nor did Columbus hazard much in confining himself to a term so short. The presages of discovering land were now so numerous and promising, that he deemed them infallible. For some days the sounding-line reached the bottom, and the soil which it brought up indicated land to be at no great distance. The flocks of birds increased, and were composed not only of sea fowl, but of such land birds as could not be supposed to fly far from the shore. The crew of the *Pinta* observed a cane floating, which seemed to have been newly cut, and likewise a piece of timber artificially carved. The sailors aboard the *Nina* took up the branch of a tree with red berries perfectly fresh. The clouds around the setting sun assumed a new appearance ; the air was more mild and warm, and during night the wind became unequal and variable. From all these symptoms, Columbus was so confident of

being near land, that on the evening of the eleventh of October, after public prayers for success, he ordered the sails to be furled, and the ships to lie-to, keeping strict watch, lest they should be driven ashore in the night. During this interval of suspense and expectation, no man shut his eyes, all kept upon deck, gazing intently towards that quarter where they expected to discover the land, which had been so long the object of their wishes.

About two hours before midnight, Columbus, standing on the forecandle, observed a light at a distance, and privately pointed it out to Pedro Gutierrez, a page of the Queen's wardrobe. Gutierrez perceived it, and calling to Salcedo, comptroller of the fleet, all three saw it in motion, as if it were carried from place to place. A little after midnight the joyful sound of LAND ! LAND ! was heard from the Pinta, which kept always ahead of the other ships. But, having been so often deceived by fallacious appearances, every man was now become slow of belief, and waited in all the anguish of uncertainty and impatience for the return of day. As soon as morning dawned, all doubts and fears were dispelled. From every ship an island was seen about two leagues to the north, whose flat and verdant fields, well stored with wood, and watered with many rivulets, presented the aspect of a delightful country. The crew of the Pinta instantly began the 'Te Deum,' as a hymn of thanksgiving to God, and were joined by those of the other ships, with tears of joy and transports of congratulation. This office of gratitude to heaven was followed by an act of justice to their commander. They threw themselves at the feet of Columbus, with feelings of self-condemnation mingled with reverence. They implored him to pardon their ignorance, incredulity, and insolence,

which had created him so much unnecessary disquiet, and had so often obstructed the prosecution of his well-concerted plan : and passing, in the warmth of their admiration, from one extreme to another, they now pronounced the man whom they had so lately reviled and threatened, to be a person inspired by heaven with sagacity and fortitude more than human, in order to accomplish a design so far beyond the ideas and conceptions of all former ages.

As soon as the sun arose, all their boats were manned and armed. They rowed towards the island with their colours displayed, with warlike music and other martial pomp. As they approached the coast, they saw it covered with a multitude of people, whom the novelty of the spectacle had drawn together, whose attitudes and gestures expressed wonder and astonishment at the strange objects which presented themselves to their view. Columbus was the first European who set foot in the new world which he had discovered. He landed in a rich dress, and with a naked sword in his hand. His men followed, and kneeling down, they all kissed the ground which they had so long desired to see. They next erected a crucifix, and prostrating themselves before it, returned thanks to God for conducting their voyage to such an happy issue. They then took solemn possession of the country for the crown of Castile and Leon, with all the formalities which the Portuguese were accustomed to observe in acts of this kind in their new discoveries.

The Spaniards while thus employed were surrounded by many of the natives, who gazed in silent admiration upon actions which they could not comprehend, and of which they did not foresee the consequences. The dress of the Spaniards, the whiteness of their skins, their

beards, their arms, appeared strange and surprising. The vast machines in which they had traversed the ocean, that seemed to move upon the waters with wings, and uttered a dreadful sound resembling thunder, accompanied with lightning and smoke, struck them with such terror, that they began to respect their new



COLUMBUS DISCOVERS AMERICA

guests as a superior order of beings, and concluded that they were children of the sun, who had descended to visit the earth.

The Europeans were hardly less amazed at the scene before them. Every herb, every shrub and tree, was different from those which flourished in Europe. The inhabitants appeared in the simple innocence of nature, entirely naked. Their black hair, long and uncurled, floated upon their shoulders, or was bound in tresses around their heads. They had no beards, and every

part of their bodies was perfectly smooth. Their complexion was of a dusky copper colour, their features singular rather than disagreeable, their aspect gentle and timid. Though not tall, they were well shaped and active. Their faces, and several parts of their body, were fantastically painted with glaring colours. They were shy at first through fear, but soon became familiar with the Spaniards, and with transports of joy received from them hawks-bells, glass beads, or other baubles, in return for which they gave such provisions as they had, and some cotton yarn, the only commodity of value that they could produce. Towards evening, Columbus returned to his ship, accompanied by many of the islanders in their boats, which they called 'canoes,' and though rudely formed out of the trunk of a single tree, they rowed them with surprising dexterity. Thus, in the first interview between the inhabitants of the old and the new worlds, every thing was conducted amicably, and to their mutual satisfaction. The former, enlightened and ambitious, formed already vast ideas with respect to the advantages which they might derive from the regions that began to open to their view. The latter, simple and undiscerning, had no foresight of the calamities and desolation which were approaching their country.

WILLIAM ROBERTSON, *The History of America*.

### OTHELLO'S WOOING

[Othello, a Moorish soldier in the service of Venice, tells how he won the love of Desdemona, daughter of a Venetian senator. Time, before 1570.]

Her father lov'd me ; oft invited me ;  
Still question'd me the story of my life,

From year to year—the battles, sieges, fortunes,  
 That I have pass'd.  
 I ran it through, even from my boyish days  
 To the very moment that he bade me tell it :  
 Wherein I spoke of most disastrous chances,  
 Of moving accidents by flood and field ;  
 Of hair-breadth scapes i' th' imminent deadly breach ;  
 Of being taken by the insolent foe,  
 And sold to slavery ; of my redemption thence,  
 And portance in my travels' history :  
 Wherein of antres vast and deserts idle,  
 Rough quarries, rocks, and hills whose heads touch  
     heaven,  
 It was my hint to speak—such was the process ;  
 And of the Cannibals that each other eat,  
 The Anthropophagi, and men whose heads  
 Do grow beneath their shoulders. This to hear  
 Would Desdemona seriously incline. . . .

WILLIAM SHAKESPEARE, *Othello*.

### THE TAKING OF THE 'CACAFUEGO.'

DRAKE began to realise that he was now entirely alone,  
 and had only himself and his own crew to depend on.  
 There was nothing to do but to go through with it,  
 danger adding to the interest. Arica was the next point  
 visited. Half a hundred blocks of silver were picked up  
 at Arica. After Arica came Lima, the chief depôt of all,  
 where the grandest haul was looked for. At Lima, alas !  
 they were just too late. Twelve great hulks lay an-  
 chored there. The sails were unbent, the men were

portance] bearing.  
 idle] untilled.

antres] caverns.  
 Anthropophagi] man-eaters.

ashore. They contained nothing but some chests of reals and a few bales of silk and linen. But a thirteenth, called by the gods *Our Lady of the Conception*, called by men *Cacafuego*, a name incapable of translation, had sailed a few hours before for the isthmus, with the whole produce of the Lima mines for the season. Her ballast was silver, her cargo gold and emeralds and rubies. Drake deliberately cut the cables of the ships in the roads, that they might drive ashore and be unable to follow him. The *Pelican* spread her wings, every feather of them, and sped away in pursuit. He would know the *Cacafuego*, so he learnt at Lima, by the peculiar cut of her sails. The first man who caught sight of her was promised a gold chain for his reward. A sail was seen on the second day. It was not the chase, but it was worth stopping for. Eighty pounds' worth of gold was found, and a great gold crucifix, set with emeralds said to be as large as pigeons' eggs. They took the kernel. They left the shell. Still on and on. We learn from the Spanish accounts that the Viceroy of Lima, as soon as he recovered from his astonishment, despatched ships in pursuit. They came up with the last plundered vessel, heard terrible tales of the rovers' strength, and went back for a larger force. The *Pelican* meanwhile went along upon her course for 800 miles. At length, when in the latitude of Quito and close under the shore, the *Cacafuego's* peculiar sails were sighted, and the gold chain was claimed. There she was, freighted with the fruit of Aladdin's garden, going lazily along a few miles ahead. Care was needed in approaching her. If she guessed the *Pelican's* character, she would run in upon the land and they would lose her. It was afternoon. The sun was still above the horizon, and Drake meant





to wait till night, when the breeze would be off the shore, as in the tropics it always is.

The *Pelican* sailed two feet to the *Cacafuego's* one. Drake filled his empty wine-skins with water and trailed them astern to stop his way. The chase supposed that she was followed by some heavy-loaded trader, and, wishing for company on a lonely voyage, she slackened sail and waited for him to come up. At length the sun went down into the ocean, the rosy light faded from off the snows of the Andes ; and when both ships had become invisible from the shore, the skins were hauled in ; the night wind rose, and the water began to ripple under the *Pelican's* bows. The *Cacafuego* was swiftly overtaken, and when within a cable's length a voice hailed her to put her head into the wind. The Spanish commander, not understanding so strange an order, held on his course. A broadside brought down the mainyard, and a flight of arrows rattled on his deck. He was himself wounded. In a few minutes he was a prisoner, and *Our Lady of the Conception* and her precious freight were in the corsair's power. The wreck was cut away ; the ship was cleared ; a prize crew was put on board. Both vessels turned their heads to the sea. At daybreak no land was to be seen, and the examination of the prize began. The full value was never acknowledged. The invoice, if there was one, was destroyed. The accurate figures were known only to Drake and Queen Elizabeth. A published schedule acknowledged to twenty tons of silver bullion, thirteen chests of silver coins, and a hundredweight of gold, but there were gold nuggets besides in indefinite quantity, and 'a great store' of pearls, emeralds, and diamonds. The Spanish Government proved a loss of a million and a half of ducats,

excluding what belonged to private persons. The total capture was immeasurably greater.

Drake, we are told, was greatly satisfied. He thought it prudent to stay in the neighbourhood no longer than necessary. He went north with all sail set, taking his prize along with him. The master, San Juan de Anton, was removed on board the *Pelican* to have his wound attended to. He remained as Drake's guest for a week, and sent in a report of what he observed to the Spanish Government. One at least of Drake's party spoke excellent Spanish. This person took San Juan over the ship. She showed signs, San Juan said, of rough service, but was still in fine condition, with ample arms, spare rope, mattocks, carpenter's tools of all description. There were eighty-five men on board all told, fifty of them men-of-war, the rest young fellows, ship-boys and the like. Drake himself was treated with great reverence ; a sentinel stood always at his cabin door. He dined alone with music.

JAMES ANTHONY FROUDE,  
*English Seamen in the Sixteenth Century.*

## SIR FRANCIS DRAKE CIRCUMNAVIGATES THE GLOBE

HAVING now full freighted himself with wealth, and burnt at the House of Crosses above two hundred thousand pounds' worth of Spanish merchandise, he returned with honour and safety into England, and some years after undertook that his famous voyage about the world, most accurately described by our English authors ; and yet a word or two thereof will not be amiss.

Setting forward from Plymouth, he bore up for Cape

Verd, where, near to the island of St. Jago, he took prisoner Nuno da Silva, an experienced Spanish pilot, whose direction he used in the coasts of Brazil and Magellan Straits, and afterwards safely landed him at Guatulco in New Spain. Hence they took their course to the island of Brava, and hereabouts they met with those tempestuous winds, whose only praise is, that they continue not an hour, in which time they change all the points of the compass. Here they had great plenty of rain, poured, not as in other places, as it were out of sieves, but as out of spouts, so that a butt of water falls down in a place ; which, notwithstanding, is but a courteous injury in that hot climate far from land, and when otherwise fresh water cannot be provided ; then, cutting the line, they saw the face of that heaven which earth hideth from us, but therein only three stars of the first greatness ; the rest few and small compared to our hemisphere, as if God, on purpose, had set up the best and biggest candles in that room wherein his civilised guests are entertained.

Sailing the South of Brazil, he afterwards passed the Magellan Straits, and then entering *Mare Pacificum*, came to the southermost land at the height of  $55\frac{1}{2}$  latitudes ; thence directing his course northwards, he pillaged many Spanish towns, and took rich prizes of high value in the kingdoms of Chili, Peru, and New Spain. Then bending eastwards he coasted China and the Moluccas, where, by the king of Terrenate, a true gentleman pagan, he was most honourably entertained. The king told them they and he were all of one religion in this respect, that they believed not in gods made of stocks and stones as did the Portuguese. He furnished them also with all necessaries that they wanted.

On the 9th of January following (1579), his ship having a large wind and a smooth sea, ran aground on a dangerous shoal, and struck twice on it, knocking twice at the door of death, which no doubt had opened the third time. Here they stuck from eight o'clock at night till four the next afternoon, having ground too much, and yet too little to land on, and water too much and yet too little to sail on. Had God, *who*, as the wise man saith (Prov. xxx. 4) *holdeth the winds in His fist*, but opened his little finger, and let out the smallest blast, they had undoubtedly been cast away, but there blew not any wind all the while. Then they conceiving aright that the best way to lighten the ship was first to ease it of the burthen of their sins by true repentance, humbled themselves by fasting under the hand of God. Afterwards they received the Communion, dining on Christ in the Sacrament, expecting no other than to sup with Him in heaven. Then they cast out of their ship six great pieces of ordnance, threw overboard as much wealth as would break the heart of a miser to think on it, with much sugar, and packs of spices, making a caudle of the sea round about. Then they betook themselves to their prayers, the best lever at such a dead lift indeed, and it pleased God that the wind, formerly their mortal enemy, became their friend, which, changing from the starboard to the larboard of the ship, and rising by degrees, cleared them off to the sea again, for which they returned unfeigned thanks to Almighty God.

By the Cape of Good Hope and west of Africa he returned safe into England, and landed at Plymouth, being almost the first of those that made a thorough light through the world, having in his whole voyage, though a curious searcher after the time, lost one day

through the variation of several climates. He feasted the Queen in his ship at Dartford, who knighted him for his service ; yet it grieved him not a little, that some prime courtiers refused the gold he offered them, as gotten by piracy. Some think that they did it to show that their envious pride was above their covetousness, who of set purpose did blur the fair copy of his performance, because they would not take pains to write after it.

THOMAS FULLER, *English Worthies*.

### SIR HUMPHREY GILBERT'S LAST VOYAGE

LEAVING the issue of this good hope unto God, who knoweth the trueth only, & can at his good pleasure bring the same to light : I will hasten to the end of this tragedie, which must be knit up in the person of our Generall. And as it was Gods ordinance upon him, even so the vehement perswasion and intreatie of his friends could nothing availe, to divert him from a wilfull resolution of going through in his Frigat, which was overcharged upon their deckes, with fights, nettings, and small artillerie, too cumbersome for so small a boate, that was to passe through the Ocean sea at that season of the yerē, when by course we might expect much storme of foule weather, whereof indeed we had enough.

But when he was intreated by the Captaine, Master, and other his well willers of the Hinde, not to venture in the Frigat, this was his answer : I will not forsake my little company going homeward, with whom I have passed so many stormes and perils. And in very trueth, hee was urged to be so over hard, by hard reports given of him, that he was afraid of the sea, albeit this was rather rashnes, then advised resolution, to preferre the wind of a vaine report to the weight of his owne life.



Seeing he would not bend to reason, he had provision out of the *Hinde*, such as was wanting aboard his *Frigat*. And so we committed him to Gods protection, & set him aboard his *Pinnesse*, we being more then 300 leagues onward of our way home.

By that time we had brought the Islands of *Açores* South of us, yet wee then keeping much to the North, until we had got into the height and elevation of England : we met with very foule weather, and terrible seas, breaking short and high Pyramid wise. The reason whereof seemed to proceede either of hilly grounds high and low within the sea, (as we see hilles and dales upon the land) upon which the seas doe mount and fall : or else the cause proceedeth of diversitie of winds, shifting often in sundry points : al which having power to move the great Ocean, which againe is not presently settled, so many seas do encounter together, as there had bene diversitie of windes. Howsoever it commeth to passe, men which all their life time had occupied the Sea, never saw more outrageous Seas. We had also upon our maine yard, an apparition of a little fire by night, which seamen doe call *Castor and Pollux*. But we had onely one, which they take an evill signe of more tempest : the same is usuall in stormes.

Munday the ninth of September, in the afternoone, the *Frigat* was neere cast away, oppressed by waves, yet at that time recovered : and giving foorth signes of joy, the Generall sitting abaft with a booke in his hand, cried out unto us in the *Hind* (so oft as we did approach within hearing) We are as neere to heaven by sea as by land. Reiterating the same speech, well beseeming a souldier, resolute in Jesus Christ, as I can testifie he was.

*Castor and Pollux*] demi-gods to whom the Greeks attributed this phenomenon. Mediterranean sailors now call it *St. Elmo's fire*.



The same Monday night, about twelve of the clocke, or not long after, the Frigat being ahead of us in the Golden Hinde, suddenly her lights were out, whereof as it were in a moment, we lost the sight, and withall our watch cryed, the Generall was cast away, which was too true. For in that moment, the Frigat was devoured and swallowed up by the Sea. Yet still we looked out all that night, and ever after, untill wee arrived upon the coast of England: Omitting no small saile at sea, unto which we gave not the tokens betweene us, agreed ypon, to have perfect knowledge of each other, if we should at any time be separated.

In great torment of weather, and perill of drowning, it pleased God to send safe home the Golden Hinde, which arrived in Falmouth, the 22 day of September, being Sonday, not without as great danger escaped in a flaw, comming from the Southeast, with such thicke mist, that we could not discerne land, to put in right with the Haven.

RICHARD HAKLUYT, *Voyages*.

### SIR HUMPHREY GILBERT

SOUTHWARD with fleet of ice  
Sailed the corsair Death ;  
Wild and fast blew the blast,  
And the east-wind was his breath.

His lordly ships of ice  
Glisten in the sun ;  
On each side, like pennons wide,  
Flashing crystal streamlets run.

His sails of white sea-mist  
Dripped with silver rain ;  
But where he passed there were cast  
Leaden shadows o'er the main.

## SIR HUMPHREY GILBERT

Eastward from Campobello  
Sir Humphrey Gilbert sailed ;  
Three days or more seaward he bore,  
Then, alas ! the land-wind failed.

Alas ! the land-wind failed,  
And ice-cold grew the night ;  
And never more, on sea or shore,  
Should Sir Humphrey see the light.

He sat upon the deck,  
The Book was in his hand ;  
' Do not fear ! Heaven is as near,'  
He said, ' by water as by land ! '

In the first watch of the night,  
Without a signal's sound,  
Out of the sea, mysteriously,  
The fleet of Death rose all around.

The moon and the evening star  
Were hanging in the shrouds ;  
Every mast, as it passed,  
Seemed to rake the passing clouds.

They grappled with their prize,  
At midnight black and cold !  
As of a rock was the shock ;  
Heavily the ground-swell rolled.

Southward through day and dark  
They drift in close embrace,  
With mist and rain o'er the open main ;  
Yet there seems no change of place.

Southward, for ever southward,  
They drift through dark and day ;  
And like a dream, in the Gulf-Stream  
Sinking, vanish all away.

HENRY WADSWORTH LONGFELLOW.

Campobello] an island in the Gulf of Fundy.  
The Book] Longfellow means the Bible. But in fact it was  
More's *Utopia*.

## V

### SUMMER AND WINTER IN THE TUNDRA

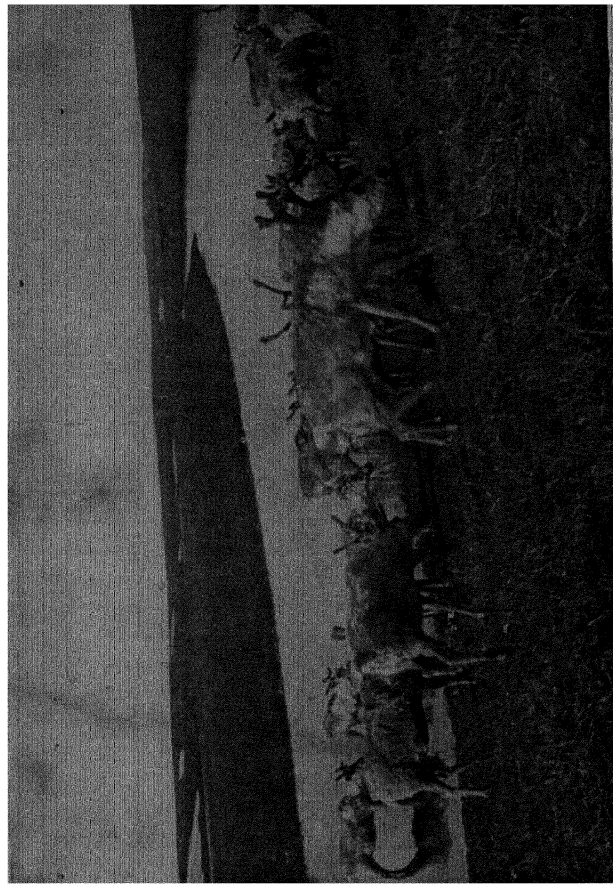
THE history of animal and vegetable life on the Tundra is a very curious one. For eight months out of the twelve every trace of vegetable life is completely hidden under a blanket, six feet thick, of snow, which effectually covers every plant and bush—trees there are none to hide. During six months of this time at least, animal life is only traceable by the foot-prints of a reindeer or a fox on the snow, or by the occasional appearance of a Raven or a Snowy Owl, wandering above the limits of forest growth, where it has retired for the winter. For two months in mid-winter, the sun never rises above the horizon, and the white snow reflects only the fitful light of the moon, the stars, or the aurora borealis. Early in February the sun just peeps upon the scene for a few minutes at noon, and then retires. Day by day he prolongs his visit more and more, until February, March, April and May have past, and continuous night has become continuous day. Early in June the sun only just touches the horizon at midnight, but does not set any more for some time. At midday the sun's rays are hot enough to blister the skin, but they glance harmless from the snow, and for a few days you have the anomaly of unbroken day in midwinter.

Then comes the south wind, and often rain, and the great event of the year takes place ; the ice on the great

rivers breaks up, and the blanket of snow melts away. The black earth absorbs the heat of the never-setting sun ; quietly but swiftly vegetable life awakens from its long sleep, and for three months a hot summer produces a brilliant Alpine flora, like an English flower-garden, run wild, and a profusion of Alpine fruit, diversified only by storms from the north, which sometimes for a day or two bring cold and rain down from the Arctic ice.

But early in August the sun begins to dip for a few moments below the horizon, and every succeeding midnight sees him hide longer and longer, until, in September, the nights are cold, the frost kills vegetation, and early in October winter has set in, snow has fallen, not to melt again for eight months ; the nights get longer and longer, until, towards the end of November, the sun has ceased to take its midday peep at the endless fields of snow, and the two months' night and silence reign supreme.

But wonderful as is the transformation in the aspect of the vegetable world in these regions, the change in animal life is far more sudden and startling. The breaking up of the ice on the great rivers is, of course, the sensational event of the season. It is probably the grandest exhibition of stupendous power to be seen in the world. Storms at sea, and hurricanes on land, are grand enough in their way, but the power displayed seems to be an angry power, which has to work itself into a passion to display its greatness. The silent upheaval of a gigantic river, four miles wide, and the smash-up of the six feet thick ice upon it, at the rate of twenty square miles an hour, is to my mind a more majestic display of power ; but for all that, the arrival of migratory birds, so suddenly and in such countless



THE SIBERIAN TUNDRA

number, appeals more forcibly to the imagination, perhaps because it is more mysterious.

HENRY SEEBOHM, *Siberia in Asia*.

By kind permission of Mr. John Murray.

NOTE.—The Tundra here described is the Siberian Tundra. The ‘gigantic river’ is the Yenesei.

## A TROPICAL RIVER

THEY started next morning cheerfully enough, and for three hours or more paddled easily up the glassy and windless reaches, between two green flower-bespangled walls of forest, gay with innumerable birds, and insects; while down from the branches which overhung the stream, long trailers hung to the water’s edge, and seemed admiring in the clear mirror the images of their own gorgeous flowers. River, trees, flowers, birds, insects—it was all a fairyland: but it was a colossal one; and yet the voyagers took little note of it. It was now to them an everyday occurrence, to see trees full two hundred feet high one mass of yellow or purple blossom to the highest twigs, and every branch and stem one hanging garden of crimson and orange orchids or vanillas. Common to them were all the fantastic and enormous shapes with which nature bedecks her robes beneath the fierce suns and fattening rains of the tropic forest. Common were forms and colours of bird, and fish, and butterfly, more strange and bright than ever opium-cater dreamed. The long processions of monkeys, who kept pace with them along the tree-tops, and proclaimed their wonder in every imaginable whistle and grunt and howl, had ceased to move their laughter, as much as the roar of the jaguar and the rustle of the boa had ceased to move their fear; and when a brilliant green and rose-coloured fish, flat-bodied like a bream, flab-finned like a salmon,

and saw-toothed like a shark, leapt clean on board of the canoe to escape the rush of the huge alligator (whose loathsome snout, ere he could stop, actually rattled against the canoe within a foot of Jack Brimblecombe's hand), Jack, instead of turning pale, as he had done at the sharks upon a certain memorable occasion, coolly picked up the fish, and said, 'He's four pound weight! If you can catch "pirai" for us like that, old fellow, just keep in our wake, and we'll give you the cleanings for wages.'

They paddled onward hour after hour, sheltering themselves as best they could under the shadow of the southern bank, while on their right hand the full sun-glare lay upon the enormous wall of mimosas, figs, and laurels, which formed the northern forest, broken by the slender shafts of bamboo tufts, and decked with a thousand gaudy parasites; bank upon bank of gorgeous bloom piled upward to the sky, till where its outline cut the blue, flowers and leaves, too lofty to be distinguished by the eye, formed a broken rainbow of all hues quivering in the ascending streams of azure mist, until they seemed to melt and mingle with the very heavens.

And as the sun rose higher and higher, a great stillness fell upon the forest. The jaguars and the monkeys had hidden themselves in the darkest depths of the woods. The birds' notes died out one by one; the very butterflies ceased their flitting over the tree-tops, and slept with outspread wings upon the glossy leaves, undistinguishable from the flowers around them. Now and then a colibri whirled downward toward the water, hummed for a moment around some pendent flower, and then the living gem was lost in the deep blackness of the inner wood, among tree-trunks as huge and dark as the pillars of some Hindoo shrine; or a parrot swung and screamed at them from an overhanging bough; or a thirsty

monkey slid lazily down a liana to the surface of the stream, dipped up the water in his tiny hand, and started chattering back, as his eyes met those of some foul alligator peeping upward through the clear depths below. In shaded nooks beneath the boughs, the capybaras, rabbits as large as sheep, went paddling sleepily round and round, thrusting up their unwieldy heads among the blooms of the blue water-lilies ; while black and purple water-hens ran up and down upon the rafts of floating leaves. The shining snout of a fresh-water dolphin rose slowly to the surface ; a jet of spray whirled up ; a rainbow hung upon it for a moment ; and the black snout sank lazily again. Here and there, too, upon some shallow pebbly shore, scarlet flamingos stood dreaming knee-deep on one leg ; crested cranes pranced up and down admiring their own finery ; and ibises and egrets dipped their bills under water in search of prey : but before noon even those had slipped away, and there reigned a stillness which might be heard—such a stillness (to compare small things with great) as broods beneath the rich shadows of Amyas's own Devon woods, or among the lonely sweeps of Exmoor, when the heather is in flower—a stillness, in which, as Humboldt says, ' If beyond the silence we listen for the faintest undertones, we detect a stifled, continuous hum of insects, which crowd the air close to the earth ; a confused swarming murmur which hangs round every bush, in the cracked bark of trees, in the soil undermined by lizards, millepedes, and bees ; a voice proclaiming to us that all nature breathes, *that* under a thousand different forms life swarms in the gaping and dusty earth, as much as in the bosom of the waters, and the air which breathes around '.

CHARLES KINGSLEY, *Westward Ho!*



## THE LOWER CONGO

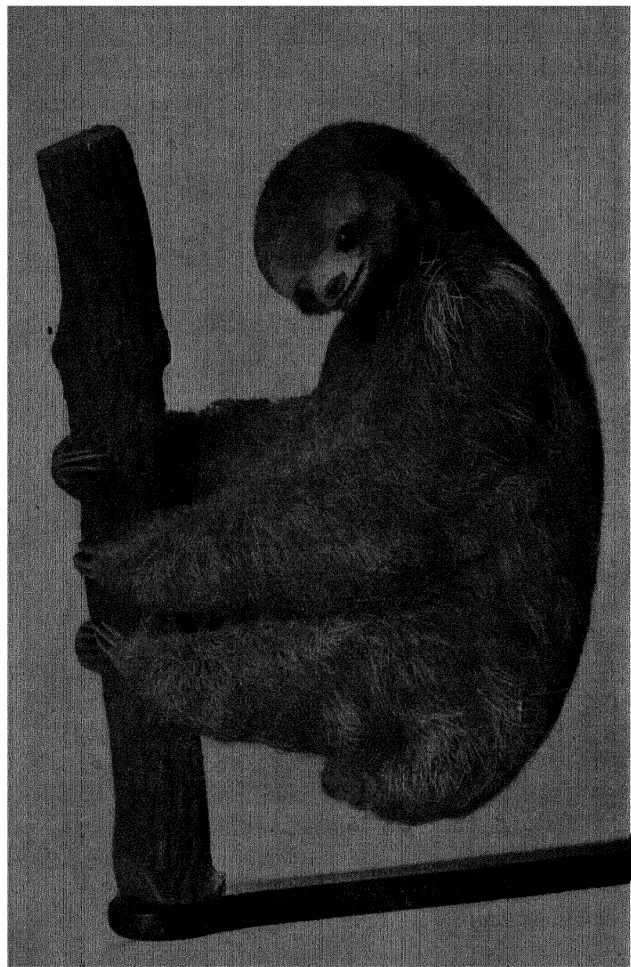
A RUSTLING in the vegetation, and a large varanus lizard slips into the water ; or on some trampled bank a crocodile lies asleep in the warm sun, with a fixed smirk hanging about his grim muzzle. These lagoons are places seething with life—life that is ever stirring, striving and active—and when you suddenly arrive, slipping and splashing in the watery footholds, the sudden silence that greets you is rather the frightened expectant hush of a thousand apprehensive creatures. Beyond the lagoons and this strip of mud and water, rises an almost impenetrable barrier of forest, nearly impossible to pass by land, but which is fortunately pierced by many little arms or natural canals of the Congo that intersect it and penetrate to the firm dry land beyond. As you paddle gently in a native canoe through the watery alleys of this vegetable Venice, the majestic trees firmly interlaced above and overarching the canal, shrouding all in pale green gloom, the glimpses of vistas through the forest that you get, reveal many beautiful forms of bird and insect life. Barbets with red foreheads and large notched bills are sitting in stupid meditation on the twigs, giving a harsh and mechanical squeak if the too near approach of the canoe disturbs their reverie. Little African woodpeckers are creeping up the branches, deftly turning round towards the unseen side when they observe you ; large green mantises or ‘ praying insects ’ are chasing small flies with their great pouncing fore-legs, and every now and then a blue roller-bird snaps up a mantis in spite of its wonderful assimilation to its leafy surroundings. Farther into the

forest, the canal, a blind alley of water, stops, the soil becomes solid and well raised, and a native path is discernible, leading through the now more park-like and formal clumps of forest to a distant village, whence the crowing of cocks and the occasional shouts of the inhabitants can be heard. But the birds do not lessen because we are approaching the abode of man. Out of the bosky trees little troops of black and white hornbills suddenly start and flap their loose irregular flight to another refuge. Violet plantain-eaters gleam out in their beauty from time to time ; golden cuckoos, yellow-vented bulbuls, green fruit pigeons, grey parrots, parrots that are grey and blue and yellow-shouldered, green love-birds, and a multitude of little waxbills, a medley of diverse and beautiful birds enliven this walk through the forest along the black peat path with their loud cries, their lovely plumage, and their rapid movements.

From *The River Congo : from its Mouth to Bolobo*, with a General Description of the Natural History and Anthropology of its Western Basin, by SIR HARRY HAMILTON JOHNSON, K.C.B. Illustrated by the author. (Sampson Low.)

## THE SLOTH

LET us now turn our attention to the Sloth, whose native haunts have hitherto been so little known, and probably little looked into. Those who have written on this singular animal, have remarked that he is in a perpetual state of pain, that he is proverbially slow in his movements, that he is a prisoner in space, and that as soon as he has consumed all the leaves of the tree upon which he had mounted, he rolls himself up in the form of a ball, and then falls to the ground. This is not the case.



THE THREE-TOED SLOTH

If the naturalists who have written the history of the sloth had gone into the wilds, in order to examine his haunts and economy, they would not have drawn the foregoing conclusions ; they would have learned, that though all other quadrupeds may be described while resting upon the ground, the sloth is an exception to the rule, and that his history must be written while he is in the tree.

This singular animal is destined by nature to be produced, to live and to die in the trees ; and to do justice to him, naturalists must examine him in this his upper element. He is a scarce and solitary animal, and being good food, he is never allowed to escape. He inhabits remote and gloomy forests, where snakes take up their abode, and where cruelly stinging ants and scorpions, and swamps, and innumerable thorny shrubs and bushes, obstruct the steps of civilized man. Were you to draw your own conclusions from the descriptions which you have been given of the sloth, you would probably suspect, that no naturalist has actually gone into the wilds with the fixed determination to find him out and examine his haunts, and see whether nature has committed any blunder in the formation of this extraordinary creature, which appears to us so forlorn and miserable, so ill put together, and so totally unfit to enjoy the blessings which have been so bountifully given to the rest of animated nature ; for, as it has formerly been remarked, he has no soles to his feet, and he is evidently ill at ease when he tries to move on the ground, and it is then he looks up into your face with a countenance that says, ‘ Have pity on me, for I am in pain and sorrow.’

It mostly happens that Indians and Negroes are the people who catch the sloth, and bring it to the white man : hence it may be conjectured that the erroneous

accounts we have hitherto had of the sloth, have not been penned down with the slightest intention to mislead the reader, or give him an exaggerated history, but that these errors have naturally arisen by examining the sloth in those places where nature never intended that he should be exhibited.

However, we are now in his own domain. Man but little frequents these thick and noble forests, which extend far and wide on every side of us. This, then, is the proper place to go in quest of the sloth. We will first take a near view of him. By obtaining a knowledge of his anatomy, we shall be enabled to account for his movements hereafter, when we see him in his proper haunts. His forelegs, or, more correctly speaking, his arms, are apparently much too long, while his hind-legs are very short, and look as if they could be bent almost to the shape of a corkscrew. Both the fore and hind legs, by their form, and by the manner in which they are joined to the body, are quite incapacitated from acting in a perpendicular direction, or in supporting it on the earth, as the bodies of other quadrupeds are supported, by their legs. Hence, when you place him on the floor, his belly touches the ground. Now, granted that he supported himself on his legs like other animals, nevertheless he would be in pain, for he has no soles to his feet, and his claws are very sharp and long, and curved ; so that, were his body supported by his feet, it would be by their extremities, just as your body would be, were you to throw yourself on all fours, and try to support it on the ends of your toes and fingers—a trying position. Were the floor of glass, or of a polished surface, the sloth would actually be quite stationary ; but as the ground is generally rough, with little protuberances upon it, such

as stones, or roots of grass, &c., this just suits the sloth, and he moves his fore-legs in all directions, in order to find something to lay hold of ; and when he has succeeded he pulls himself forward, and is thus enabled to travel onwards, but at the same time in so tardy and awkward a manner, as to acquire him the name of Sloth.

Indeed his looks and his gestures evidently betray his uncomfortable situation : and as a sigh every now and then escapes him, we may be entitled to conclude that he is actually in pain.

Some years ago I kept a sloth in my room for several months. I often took him out of the house and placed him upon the ground, in order to have an opportunity of observing his motions. If the ground were rough, he would pull himself forwards, by means of his fore-legs, at a pretty good pace ; and he invariably immediately shaped his course towards the nearest tree. But if I put him upon a smooth and well-trodden part of the road, he appeared to be in trouble and distress : his favourite abode was the back of a chair : and after getting all his legs in a line upon the topmost part of it, he would hang there for hours together, and often with a low and inward cry, would seem to invite me to take notice of him.

The sloth, in its wild state, spends its whole life in trees, and never leaves them but through force, or by accident. An all-ruling Providence has ordered man to tread on the surface of the earth, the eagle to soar in the expanse of the skies, and the monkey and squirrel to inhabit the trees : still these may change their relative situations without feeling much inconvenience : but the sloth is doomed to spend his whole life in the trees ; and, what is more extraordinary, not *upon* the branches, like the squirrel and the monkey, but *under* them. He moves

suspended from the branch, he rests suspended from it, and he sleeps suspended from it. To enable him to do this, he must have a very different formation from that of any other known quadruped.

Hence, his seemingly bungled conformation is at once accounted for ; and in lieu of the sloth leading a painful life, and entailing a melancholy and miserable existence on its progeny, it is but fair to surmise that it just enjoys life as much as any other animal, and that its extraordinary formation and singular habits are but further proofs to engage us to admire the wonderful works of Omnipotence.

It must be observed, that the sloth does not hang head-downwards like a vampire. When asleep, he supports himself from a branch parallel to the earth. He first seizes the branch with one arm, and then with the other ; and after that, brings up both his legs, one by one, to the same branch ; so that all four are in a line : he seems perfectly at rest in this position. Now, had he a tail, he would be at a loss to know what to do with it in this position : were he to draw it up within his legs, it would interfere with them ; and were he to let it hang down, it would become the sport of the winds. Thus his deficiency of tail is a benefit to him ; it is merely an apology for a tail, scarcely exceeding an inch and a half in length.

I observed, when he was climbing, he never used his arms both together, but first one and then the other, and so on alternately. There is a singularity in his hair, different from that of all other animals, and, I believe, hitherto unnoticed by naturalists ; his hair is thick and coarse at the extremity, and gradually tapers to the root, where it becomes fine as a spider's web. His fur

has so much the hue of the moss which grows on the branches of the trees, that it is very difficult to make him out when he is at rest.

The male of the three-toed sloth has a longitudinal bar of very fine black hair on his back, rather lower than his shoulder-blades ; on each side of this black bar there is a space of yellow hair, equally fine : it has the appearance of being pressed into the body, and looks exactly as if it had been singed. If we examine the anatomy of his fore-legs, we shall immediately perceive by their firm and muscular texture, how very capable they are of supporting the pendent weight of his body, both in climbing and at rest ; and, instead of pronouncing them a bungled composition, as a celebrated naturalist has done, we shall consider them as remarkably well calculated to perform their extraordinary functions.

As the sloth is an inhabitant of forests within the tropics, where the trees touch each other in the greatest profusion, there seems to be no reason why he should confine himself to one tree alone for food, and entirely strip it of its leaves. During the many years I have ranged the forests, I have never seen a tree in such a state of nudity ; indeed, I would hazard a conjecture, that, by the time the animal had finished the last of the old leaves, there would be a new crop on the part of the tree he had stripped first, ready for him to begin again, so quick is the process of vegetation in these countries.

There is a saying amongst the Indians, that when the wind blows, the sloth begins to travel. In calm weather he remains tranquil, probably not liking to cling to the brittle extremity of the branches, lest they should break with him in passing from one tree to another ; but as soon as the wind rises, the branches of the neighbouring



trees become interwoven, and then the sloth seizes hold of them, and pursues his journey in safety. There is seldom an entire day of calm in these forests. The trade-wind generally sets in about ten o'clock in the morning, and thus the sloth may set off after breakfast, and get a considerable way before dinner. He travels at a good round pace ; and were you to see him pass from tree to tree, as I have done, you would never think of calling him a sloth.

Thus, it would appear that the different histories we have of this quadruped are erroneous on two accounts : first, that the writers of them, deterred by difficulties and local annoyances, have not paid sufficient attention to him in his native haunts ; and secondly, they have described him in a situation in which he was never intended by nature to cut a figure ; I mean on the ground. The sloth is as much at a loss to proceed on his journey upon a smooth and level floor, as a man would be who had to walk a mile in stilts upon a line of feather beds.

One day, as we were crossing the Essequibo, I saw a large two-toed sloth on the ground upon the bank ; how he had got there nobody could tell : the Indian said he had never surprised a sloth in such a situation before : he would hardly have come there to drink, for both above and below the place, the branches of the trees touched the water, and afforded him an easy and safe access to it. Be this as it may, though the trees were not above twenty yards from him, he could not make his way through the sand time enough to escape before we landed. As soon as we got up to him he threw himself upon his back, and defended himself in gallant style with his fore-legs. ‘ Come, poor fellow,’ said I to him, ‘ if thou hast got into a hobble to-day, thou shalt not

suffer for it : I'll take no advantage of thee in misfortune ; the forest is large enough both for thee and me to rove in ; go thy ways up above, and enjoy thyself in these endless wilds ; it is more than probable thou wilt never have another interview with man. So fare thee well.' On saying this, I took a long stick which was lying there, held it for him to hook on, and then conveyed him to a high and stately mora. He ascended with wonderful rapidity, and in about a minute he was almost at the top of the tree. He now went off in a side direction, and caught hold of the branch of a neighbouring tree ; he then proceeded towards the heart of the forest. I stood looking on, lost in amazement at his singular mode of progress. I followed him with my eye till the intervening branches closed in betwixt us ; and then I lost sight for ever of the two-toed sloth. I was going to add, that I never saw a sloth take to his heels in such earnest ; but the expression will not do, for the sloth has no heels.

That which naturalists have advanced of his being so tenacious of life, is perfectly true. I saw the heart of one beat for half an hour after it was taken out of the body. The wourali poison seems to be the only thing that will kill it quickly. On reference to a former part of these wanderings, it will be seen that a poisoned arrow killed the sloth in about ten minutes.

So much for this harmless, unoffending animal. He holds a conspicuous place in the catalogue of the animals of the new world. Though naturalists have made no mention of what follows, still it is not less true on that account. The sloth is the only quadruped known, which spends its whole life from the branch of a tree, suspended by his feet. I have paid uncommon attention to him in his native haunts. The monkey and squirrel will

seize a branch with their fore-feet, and pull themselves up, and rest or run upon it ; but the sloth, after seizing it, still remains suspended, and suspended moves along under the branch, till he can lay hold of another. Whenever I have seen him in his native woods, whether at rest, or asleep, or on his travels, I have always observed that he was suspended from the branch of a tree. When his form and anatomy are attentively considered, it will appear evident that the sloth cannot be at ease in any situation, where his body is higher, or above his feet. We will now take our leave of him.

CHARLES WATERTON, *Wanderings in South America.*

## THE LEVIATHAN

Canst thou draw out leviathan with an hook ?  
or his tongue with a cord which thou lettest down ?  
Who can open the doors of his face ?  
his teeth are terrible round about.  
His scales are his pride,  
shut up together as with a closed seal.  
One is so near to another,  
that no air can come between them.  
They are joined one to another,  
they stick together, that they cannot be sundered.  
By his neesings a light doth shine,  
and his eyes are like the eye-lids of the morning.  
Out of his mouth go burning lamps,  
and sparks of fire leap out.  
Out of his nostrils goeth smoke,  
as out of a seething pot or cauldron.  
His breath kindleth coals,  
and a flame goeth out of his mouth.  
In his neck remaineth strength,  
and sorrow is turned into joy before him.

leviathan] the crocodile.

The flakes of his flesh are joined together :  
they are firm in themselves ; they cannot be moved.  
His heart is as firm as a stone ;  
yea, as hard as a piece of the nether millstone.  
The sword of him that layeth at him cannot hold ;  
the spear, the dart, nor the habergeon.  
He esteemeth iron as straw,  
and brass as rotten wood.  
The arrow cannot make him flee :  
sling-stones are turned with him into stubble.  
Darts are counted as stubble :  
he laugheth at the shaking of a spear.  
He maketh the deep to boil like a pot :  
he maketh the sea like a pot of ointment.  
He maketh a path to shine after him ;  
one would think the deep to be hoary.  
Upon earth there is not his like,  
who is made without fear.  
He beholdeth all high things :  
he is a king over all the children of pride.

*The Book of Job, c. xli.*

## THE NATURE OF CROCODILES

THE nature of crocodiles is such as I shall now set forth. During the winter months they eat nothing. They are quadrupeds, but amphibious : they lay and hatch their eggs on land, and most part of the day they spend on dry ground, but the whole of the night in the river, for the water is then warmer than the open air and the dew. Of all mortal creatures known to us the crocodile from the least grows to be the largest. For the eggs are not much bigger than those of a goose, and the new-hatched crocodile is in proportion to the egg ; but he grows till he attains a length of seventeen cubits or even more. He has eyes like a pig's, and great tusky teeth in proportion to the size of his body. Alone among animals

he grows no tongue. Neither does he move his lower jaw, but in this too he is singular among animals, that he brings the upper jaw down to the lower. Moreover he has strong claws, and a scaly impenetrable hide on his back. Blind in water, in the air he is very keensighted. Because he has his living in water, the inside of his mouth is all full of leeches. And whereas all other birds and beasts flee from him, with the trochilus he is at peace for the service which she renders him. For when the crocodile comes up out of the water on to the land, he gapes, commonly towards the west ; whereupon the trochilus enters his mouth and gobbles up the leeches. And he, grateful for the service, does the bird no harm.

With some of the Egyptians crocodiles are sacred animals ; others treat them as enemies. Those who dwell around Thebes and Lake Moeris hold them in great veneration. Each of these peoples maintains a sacred crocodile, which they tame and train, putting pendants of glass and gold in their ears and anklets on their forelegs. They give them appointed food and sacrificial victims, and tend them sumptuously while they live, and when they die they embalm them and bury them in sacred tombs. But the people of Elephantina, far from regarding crocodiles as sacred, do even eat them. In Egyptian they are called not crocodiles but *champsae*. It was the Ionians who called them ' crocodiles,' likening them to the lizards in their stone walls at home.

Divers ways are in use for the taking of crocodiles : I set down that which seems to me most worthy of relation. The hunter baits his hook with a chine of pork, and casts it into the river ; then he takes a live

no tongue] In this, and other particulars, the Egyptians seem to have played on Herodotus's credulity.

sucking-pig, and, standing on the river's brink, he beats it. The crocodile hearing the squeal makes for the sound, comes on the chine and gorges it : then they haul. And when he has been hauled ashore, the hunter first of all plasters up his eyes with mud : if this be done the crocodile is easily mastered, but if not he gives much trouble.

HERODOTUS, Bk. II. cc. 68, 69.

NOTE.—'Crocodile' is simply Ionian Greek for 'lizard.' The Greeks loved this kind of joke: they called the ostrich the 'sparrow', and the huge Colossus of Rhodes the 'doll'.

### A RIDE ON AN ALLIGATOR

WE found a cayman, ten feet and a half long, fast to the end of the rope. Nothing now remained to do, but to get him out of the water without injuring his scales, *hoc opus, hic labor*. We mustered strong: there were three Indians from the creek, there was my own Indian, Yan; Daddy Quashi, the negro from Mrs. Peterson's; James, Mr. R. Edmonstone's man, whom I was instructing to preserve birds; and, lastly, myself.

I informed the Indians that it was my intention to draw him quietly out of the water, and then secure him. They looked and stared at each other, and said I might do it myself, but they would have no hand in it; the cayman would worry some of us. On saying this, they squatted on their hams with the most perfect indifference.

The Indians of these wilds have never been subject to the least restraint; and I knew enough of them to be aware, that if I tried to force them against their will, they would take off, and leave me and my presents unheeded, and never return.

Daddy Quashi was for applying to our guns, as usual,

*hoc opus, etc.*] This was the difficulty.

considering them our best and safest friends. I immediately offered to knock him down for his cowardice, and he shrank back, begging that I would be cautious, and not get myself worried ; and apologising for his want of resolution. My Indian was now in conversation with the others, and they asked me if I would allow them to shoot a dozen arrows into him, and thus disable him. This would have ruined all. I had come above three hundred miles on purpose to get a cayman uninjured, and not to carry back a mutilated specimen. I rejected their proposition with firmness, and darted a disdainful eye upon the Indians.

Daddy Quashi was again beginning to remonstrate, and I chased him on the sandbank for a quarter of a mile. He told me afterwards, he thought he should have dropped down dead with fright, for he was firmly persuaded, if I had caught him, I should have bundled him into the cayman's jaws. Here then we stood, in silence, like a calm before a thunderstorm. They wanted to kill him, and I wanted to take him alive.

I now walked up and down the sand, revolving a dozen projects in my head. The canoe was at a considerable distance, and I ordered the people to bring it round to the place where we were. The mast was eight feet long, and not much thicker than my wrist. I took it out of the canoe, and wrapped the sail round the end of it. Now it appeared clear to me, that if I went down upon one knee, and held the mast in the same position as the soldier holds his bayonet when rushing to the charge, I could force it down the cayman's throat, should he come open-mouthed at me. When this was told to the Indians they brightened up, and said they would help me to pull him out of the river.

‘Brave squad!’ said I to myself, ‘*Audax omnia perpeti*, now that you have got me betwixt yourselves and danger.’ I then mustered all hands for the last time before the battle. We were, four South American savages, two negroes from Africa, a creole from Trinidad, and myself, a white man from Yorkshire. In fact, a little Tower of Babel group, in dress, no dress, address, and language.

Daddy Quashi hung in the rear; I showed him a large Spanish knife, which I always carried in the waistband of my trousers: it spoke volumes to him, and he shrugged up his shoulders in absolute despair. The sun was just peeping over the high forests on the eastern hills, as if coming to look on, and bid us act with becoming fortitude. I placed all the people at the end of the rope, and ordered them to pull till the cayman appeared on the surface of the water; and then, should he plunge, to slacken the rope and let him go again into the deep.

I now took the mast of the canoe in my hand (the sail being tied round the end of the mast) and sank down upon one knee, about four yards from the water’s edge, determining to thrust it down his throat, in case he gave me an opportunity. I certainly felt uncomfortable in this situation, and I thought of Cerberus on the other side of the Styx ferry. The people pulled the cayman to the surface; he plunged furiously as soon as he arrived in these upper regions, and immediately went below again on their slackening the rope. I saw enough not to fall in love at first sight. I now told them we would run all risks, and have him on land immediately. They pulled again, and out he came—*monstrum horren-*

*Audax*, etc.] Brave to endure all things.

*monstrum*, etc.] a monster horrible, misshapen.



*dum, informe.* This was an interesting moment. I kept my position firmly, with my eye fixed steadfast on him.

By the time the cayman was within two yards of me, I saw he was in a state of fear and perturbation : I instantly dropped the mast, sprang up and jumped on his back, turning half round as I vaulted, so that I gained my seat with my face in a right position. I immediately seized his forelegs, and by main force twisted them on his back ; thus they served me for a bridle.

He now seemed to have recovered from his surprise, and probably fancying himself in hostile company, he began to plunge furiously, and lashed the sand with his long and powerful tail. I was out of reach of the strokes of it, by being near his head. He continued to plunge and strike, and made my seat very uncomfortable. It must have been a fine sight for an unoccupied spectator.

The people roared out in triumph, and were so vociferous, that it was some time before they heard me tell them to pull me and my beast of burthen farther inland. I was apprehensive the rope might break, and then there would have been every chance of going down to the regions under water with the cayman. That would have been more perilous than Arion's marine morning ride.

The people now dragged us about forty yards on the sand ; it was the first and last time I was ever on a cayman's back. Should it be asked how I managed to keep my seat, I would answer—I hunted some years with Lord Darlington's fox-hounds.

After repeated attempts to regain his liberty the cayman gave in, and became tranquil through exhaustion. I now managed to tie up his jaws, and firmly secured

Arion's . . ride] Arion, in Greek story, rode on a dolphin.

his fore-feet in the position I had held them. We had now another severe struggle for superiority, but he was soon overcome, and again remained quiet. While some of the people were pressing upon his head and shoulders, I threw myself on his tail, and by keeping it down to the sand, prevented him from kicking up another dust. He was finally conveyed to the canoe, and then to the place where we had suspended our hammocks. There I cut his throat ; and, after breakfast was over, commenced the dissection.

CHARLES WATERTON, *Wanderings in South America.*

## GIANT TORTOISES

It was after sunset when the adventurers returned. I looked over the ship's high side as if looking down over the curb of a well, and dimly saw the damp boat deep in the sea with some unwonted weight. Ropes were dropt over, and presently three huge antediluvian-looking tortoises, after much straining, were landed on deck. They seemed hardly of the seed of earth. We had been abroad upon the waters for five long months, a period amply sufficient to make all things of the land wear a fabulous look to the dreamy mind. Had the Spanish custom-house officers boarded us then, it is not unlikely that I should have curiously stared at them, felt of them, and stroked them much as savages serve civilized guests. But instead of three custom-house officers, behold three really wondrous tortoises—none of your schoolboy mud-turtles—but black as widowers' weeds, heavy as chests of plate, with vast shells medal-lioned and orbéd like shields, and dented and blistered like shields that have breasted a battle ; shaggy, too,

here and there, with dark green moss, and slimy with the spray of the sea. These mystic creatures, suddenly translated by night from unutterable solitudes to our peopled deck, affected me in a manner not easy to unfold. They seemed newly crawled forth from beneath the foundations of the world. Yea, they seemed the identical tortoises whereon the Hindoo plants this total sphere. With a lantern I inspected them more closely. Such worshipful venerableness of aspect ! Such furry greenness mantling the rude feelings and healing the fissures of their shattered shells. I no more saw three tortoises. They expanded—became transfigured. I seemed to see three Roman Coliseums in magnificent decay.

“Ye oldest inhabitants of this or any other isle,’ said I, ‘pray, give me the freedom of your three walled towns.’

The great feeling inspired by these creatures was that of age—dateless, indefinite endurance. And in fact, that any other creature can live and breathe as long as the tortoise of the Encantadas I will not readily believe. Not to hint of their known capacity of sustaining life, while going without food for an entire year, consider that impregnable armour of their living mail. What other bodily being possesses such a citadel wherein to resist the assaults of Time ?

As, lantern in hand, I scraped among the moss and beheld the ancient scars of bruises received in many a sullen fall among the nearby mountains of the isle—scars strangely widened, swollen, half obliterate, and yet distorted like those sometimes found in the bark of very hoary trees—I seemed an antiquary or a geologist,

the Hindoo] Alluding to the Hindoo myth that the world is supported by an elephant, which in turn stands on a tortoise.

studying the bird-tracks and ciphers upon the exhumed slates trod by incredible creatures whose very ghosts are now defunct.

As I lay in my hammock that night, overhead I heard the slow weary draggings of the three ponderous strangers along the encumbered deck. Their stupidity or their resolution was so great that they never went aside for any impediment. One ceased his movements altogether just before the mid-watch. At sunrise I found him butted like a battering-ram against the immovable foot of the foremast, and still striving, tooth and nail, to force the impossible passage. That these tortoises are the victims of a penal or malignant or perhaps a downright diabolical enchanter, seems in nothing more likely than in that strange infatuation of hopeless toil which so often possesses them. I have known them in their journeyings ram themselves heroically against rocks, and long abide there, nudging, wriggling, wedging, in order to displace them, and so hold on their inflexible path. Their crowning curse is their drudging impulse to straightforwardness in a belittered world.

Meeting with no such hindrance as their companion did, the other tortoises merely fell foul of small stumbling blocks—buckets, blocks, and coils of rigging—and at times in the act of crawling over them would slip with an astounding rattle to the deck. Listening to these draggings and concussions, I bethought me of the haunt from which they came ; an isle full of metallic ravines and gulches, sunk bottomlessly into the hearts of splintered mountains, and covered for many miles with inextricable thickets. I then pictured these three straightforward monsters, century after century, writhing through the shades, grim as blacksmiths ; crawling so

slowly and ponderously, that not only did toad-stools and all fungus things grow beneath their feet, but a sooty moss sprouted upon their backs. With them I lost myself in volcanic mazes ; brushed away endless boughs of rotting thickets ; till, finally, in a dream I found myself sitting cross-legged upon the foremost, a Brahmin similarly mounted upon either side, forming a tripod of foreheads which upheld the universal cope.

Such was the wild nightmare begot by my first impression of the Encantadas tortoise. But next evening, strange to say, I sat down with my shipmates, and made a merry repast from tortoise steaks and tortoise stews ; and supper over, out knife, and helped convert the three mighty concave shells into three fanciful soup-tureens, and polished the three flat yellowish calipees into three gorgeous salvers.

HERMAN MELVILLE, *Piazza Tales*.

## THE MAGPIE AND THE EEL

I WOLL tell you an ensauple of a woman that ete the good morsell in the absence of her husbonde.

Ther was a woman that had a pie in a cage, that spake and wolde tell talys that she saw do. And so it happed that her husbonde made kepe a gret ele in a litell ponde in his gardin, to that entent to yeue it sum of his frendes that wolde come to see hym ; but the wyff, whanne her husbond was oute, saide to her maide, ‘ late us ete the gret ele, and y will saie to my husbond that the otour hathe eten hym ; ’ and so it was done. And whan the good man was come, the pye began to tell hym how her

Brahmin] a high-caste Hindoo ; alluding to the myth noted above.

cope] the dome of heaven.

otour] otter.

maistresse had eten the ele. And he yode to the ponde and fonde not the ele. And he asked his wiff wher the ele was become. And she wende to have excused her, but he saide her, 'excuse you not, for y wote well ye have eten yt, for the pye hathe told me.' And so ther was gret noyse betwene the man and hys wiff for etinge of the ele. But whanne the good man was gone, the maistresse and the maide come to the pie, and plucked of all the fedres on the pyes hede, saieng, 'thou hast discovered us of the ele;' and thus was the pore pye plucked. But ever after, whanne the pie sawe a balled, or a pilled man, or a woman with an high forhede, the pie saide to hem, 'ye spake of the ele.' And therfor here is an ensauple that no woman shulde ete no lycorous morcelles in the absens and withoute weting of her husbond, but yef it so were that it be with folk of worshipp, to make hem chere; for this woman was afterward mocked for the pye and the ele.

*The Knight de la Tour Landry* (14th century).

NOTE.—This pleasant tale reminds us that, though eels have been esteemed a delicacy ever since classical times, their habits attracted no special attention until the Middle Ages. The story goes that certain German monks, provident for their Sunday's fare, decided, like the goodman in our tale, to stock a stewpond with eels. In the summer all went well. But in autumn the full-grown eels disappeared! The pond had no practicable outlet, yet the full-grown eels had vanished. Where had they gone? They had gone to the ocean. In the autumn in which an eel attains maturity, an irresistible impulse drives it to seek the ocean. If it is confined in a pond with no available outlet, it travels overland. Wherever there is a patch of dampness—marsh, bog, mud, even dewy grass—there it slithers through until it strikes running water. Then from brooklet to stream, from stream to river, it passes on to the ocean. What becomes of it then was a mystery for centuries. But in 1922 the mystery was solved, the following extract tells us how.

yode] went.

lycorous] daintv.

wende] thought.

weting] knowledge.

pilled] shaven.

but yef] unless.

## THE HISTORY OF THE EEL

THE propagation of the common eel was a mystery not only to ordinary people, but also to naturalists, from the time of Aristotle to the end of the nineteenth century, and continued to be a mystery for years after the breeding and development of many other fishes, both marine and fresh-water, had been successfully studied and investigated. At present our knowledge of the development of the eel is almost but not quite complete, and the extraordinary facts of the matter have been brought to light chiefly by the adventurous and persevering efforts of the Danish naturalist, Dr. Johannes Schmidt of Copenhagen, who has published a memoir of his researches in the *Philosophical Transactions* of the Royal Society of London and has described them in articles in *Nature* (August 22, 1912, and January 13, 1923).

The gradual elucidation of the history of the eel started from our knowledge of a very curious group of fishes named Leptocephali, which means 'Small-heads.' They were so named from the fact that the head is very small in proportion to the body, which is like a narrow ribbon  $\frac{1}{2}$  to  $\frac{5}{4}$  in. in breadth and from 3 to 6 in. in length. The surfaces of the ribbon are the right and left sides of the fish, so that the breadth is vertical in the natural position, and the whole creature is perfectly transparent. The newly hatched young of many fishes are transparent, but they are usually of minute size, while the Leptocephali are much larger. These remarkable creatures have been collected from time to time, some at the surface of the ocean in various parts of the world, some cast on the shores in England or other parts of Europe. Various species of them were distinguished,

but for a long time there was nothing to show what relation they bore to other fishes. It was evident that they were not mature, and some naturalists suggested that they were monstrosities, that they were the young of some ordinary fishes which from time to time were accidentally carried into mid-ocean by currents, and there went on growing in size without advancing in structure, that they were in fact overgrown fish-larvae which were unable to complete their normal development because they had been removed from their normal conditions of life. Gradually, however, evidence presented itself that these *Leptocephali* were connected with the eel family.

Although there is only one fresh-water eel in Europe and another very similar in North America, there are many species of the same family in the sea, some living at moderate depths and some in the deep abysses of the ocean. On the Atlantic coasts of Europe there is only one marine species, the well-known conger, which reaches 7 or even 8 ft. in length, but there are several species in the Mediterranean, one of which, the *Muraena*, was a favourite article of food to the ancient Romans. The species of the eel family are similar in certain important features of structure to the herring family, the salmon family, the carp family, and others, but they are distinguished by the entire absence of the hinder pair of fins. In this and other details of structure, such as the number of the vertebrae, the *Leptocephali* agree with the eels. In particular the *Leptocephalus morrisii*, several specimens of which form had been captured on British and French coasts, were considered to be probably the young of the conger. At last in 1886 a specimen of this form, taken at Roscoff in Normandy in February, was kept



alive, and in the period between this month and July actually changed into a young conger, which was dark in colour, cylindrical in shape, and shorter than in the original condition.

After this it appeared extremely probable that the various Leptocephali were the normal young forms or larvae of various species of the eel family, and that the early condition of the common eel was probably a transparent ribbon-shaped Leptocephalus.

In the years 1891-1894 an Italian professor, G. B. Grassi, and his colleague, Signore Calandruccio, studied carefully the Leptocephali which they obtained at Catania, on the east coast of Sicily. In this neighbourhood, especially near Messina, it had long been known that these peculiar fishes were rather abundant. One of them had been distinguished as *brevirostris* or short-snouted. The Italian naturalists now proved that this particular form changed into the common eel, and, as in the case of the conger, the perfect young eel was smaller and shorter than the ribbon-like form from which it developed: the latter reached a length of  $3\frac{1}{4}$  in. with a breadth (or vertical height) of  $\frac{2}{5}$  in. (0·4 in.) and it develops into a slender thread-like dark-coloured elver about 2 in. in length.

Elvers, that is to say, young recognisable eels 2 to 3 in. in length, but not less than 2 in., were long known to ascend rivers in enormous numbers in spring. On the banks of the Severn, for example, these little fish can be seen at the right season, March and April, passing up along the banks in countless millions, and the people of the neighbourhood are in the habit of dipping them out of the water with hand-nets and making fish-cakes of them, or otherwise cooking them for food. On the

other hand, adult eels are captured in large numbers in autumn passing down the rivers towards the sea, and in Denmark and other places these migrating eels have been shown to be more silvery in colour and to have larger eyes than ordinary specimens. With one or two exceptions none of them have large roes, so that the exceptions must be regarded as abnormal, and the vast majority of eels go down to the sea to breed, and the young eels come up from the sea to the rivers and fresh waters. There is no evidence that the adult eels ever return from the sea after their migration. It is true also that the male eels are usually found in estuaries or near the mouths of the rivers and do not ascend so far as the females.

It was improbable that the eel larvae should exist only near the coast of Sicily, or only in the Mediterranean, and Dr. Schmidt was first led to give his attention to the subject by the capture of a specimen of *Leptocephalus brevirostris* from the sea near the surface to the west of the Faroe Islands in the far north of the Atlantic. As a result of this it came about that Denmark, where the eel fishery is an important industry, undertook the task of carrying on the investigation of the eel question, and the direction of the work was entrusted to Dr. Schmidt. This work has been continued from 1904 to 1922 with some interruptions. It consisted chiefly in fishing with special nets in order to ascertain where the larval eels were to be found, at what seasons, and what was their size and condition at each part of the sea. The earlier cruises were made in the steamer *Thor*, which was owned by the Danish Government and specially equipped for marine research. It was found that *Leptocephali* of the common eel were found in numbers in the Atlantic

from the Faroes to Brittany, outside, *i.e.* to the west of, the 500 fathom line, but not to the east of it. It was shown that in August and September the larvae were undergoing 'metamorphosis' or transformation into the perfect eel, and it was evident that the fully developed elvers appearing at the mouths of rivers in spring were derived from the Leptocephali of the previous summer and were at least one year old.

The next task was to discover where the younger larvae occurred. Those above mentioned were the largest in the Leptocephalus stage, just before metamorphosis, and little less or more than 3 in. in length. The Norwegian naturalist, Dr. Hjort, in an Atlantic expedition obtained 21 specimens to the south and west of the Azores, and these were only 2 in. in length. It was supposed that these were a year younger than the others and that the actual spawning place was between the Azores and Bermudas. Further collections were made, partly from the Danish liners on their voyages across the Atlantic between the English Channel and the West Indies, the special towing-nets for young fishes being supplied to them to be used for an hour or so when possible, and partly from a cruise by a special schooner called the *Margarethe*, fitted out for the purpose. This ship was wrecked in the West Indies, but the collections were saved. It was found that the smallest larvae, from 9 to 21 mm. in length, were taken in spring and summer about lat. 26 N., long. 55 W., that is, in the Sargasso Sea.

Finally, a four-masted motor schooner, the *Dana*, of 550 tons, was specially fitted out for the purpose of these researches. Expeditions on this ship were made in 1920 and 1921, and large numbers of larvae were collected at different positions in the western part of the North

Atlantic. When the places of capture were plotted out according to the sizes of the larvae, it was proved that all those less than 10 mm. ( $\frac{2}{5}$  in.) in length were taken in the middle of the Sargasso Sea, and the larger sizes at increasingly greater distances from this region. This region must be regarded, then, as the spawning place of the European eel. It extends from 20 to 30 N. lat. and from 50 to 65 W. long. In one haul of two hours' duration in this region in June 1920 nearly 800 specimens were obtained, the largest number being 24 mm., or very nearly 1 in., in length. These are considered to be in their first year, probably hatched a few months earlier. The elvers which reach the coast of Europe are calculated to be three years old. The depth of the ocean in the eel-spawning area is from 3000 to 4000 fathoms.

There is one question on which Dr. Schmidt's evidence does not seem quite conclusive, namely, whether the eel spawns in the Mediterranean, or whether all the larvae in that sea come from the Atlantic through the Straits of Gibraltar. There are no eels in the Danube, or in the Black Sea or the Caspian or any of the great rivers flowing into these seas. But there are eels in Egypt, in Greece, Italy, and Spain, and in particular a large eel fishery at Comacchio near Venice. We have seen that the particular *Leptocephalus* which belongs to the freshwater eel was first identified on the coast of Sicily, and Dr. Schmidt has stated that the full-grown larvae were not found by him east of the 500 fathom line, which is inconsistent with the view that they pass through the Straits of Gibraltar. It has been stated also that metamorphosed elvers are found at the mouth of the Nile in February, which is as early as, or earlier than, the time of their annual appearance on the west coast of Ireland,

although the coast of Egypt is so much farther from the Atlantic breeding place.

On the other hand, Grassi and Calandruccio do not state that they obtained on the coast of Sicily the youngest and earliest stages of the *Leptocephalus* of the eel. The depth of the sea to the north of Sicily increases to more than 1000 fathoms and it is possible that this is sufficient depth for eels to spawn in, but if they do spawn there the very young larvae and the eggs should be captured there. This brings us to the question of the eggs, and Schmidt himself has not yet obtained them from the Atlantic or identified them with certainty. On the other hand, Doctor Raffaele, an extremely able Italian naturalist, studied and described at Naples in 1885-1887, a number of buoyant fish eggs which, from the characters of the larvae hatched from them, certainly belong to the eel family. The question is: Was one kind of these eggs the egg of the common eel? One kind had a single oil globule in the yolk, and the youngest of the eel larvae seen by Dr. Schmidt show a single oil globule in the portion of yoke still unabsorbed. But the larva hatched from this egg, though certainly a *Leptocephalus*, has not been identified with the larva of the common eel. The question, therefore, whether the eel spawns and develops in the Mediterranean cannot yet be answered positively, though the above facts indicate the possibility, if not the probability, that it does so.

In conclusion, we may mention some remarkable facts concerning both the eel and the conger in the adult state. In the first place, there is a great difference between the sexes in size. The male eel seldom exceeds a length of 18 in., while the females may reach a length of 3 ft. or somewhat more. In the conger the difference is still

greater. The present writer has made a study of the conger for a considerable time at the aquarium and laboratory of the Marine Biological Association at Plymouth. The largest male conger recorded was not quite 2 ft. 6 in. in length, while females 6 ft. in length are common, and specimens up to 8 ft. 3 in. are on record. Secondly, though nothing has been seen of mature eels after their descent to the sea, observations of the present writer and one or two others on conger in the aquarium show that both sexes cease to feed when the reproductive organs begin to mature, and they live for three to six months without feeding, and finally die, the females without spawning, and the males in a mature condition. When the females die the roes are enormously enlarged though the eggs are not quite mature. But a more extraordinary fact is that the bones have lost all their lime, and become as soft as cheese, while the muscles are much reduced. The males before they die get into a much worse condition, the skin becomes ulcerated, the body emaciated, and the eyes so much diseased that the fish is quite blind. It is evident, therefore, that though the female conger is unable to spawn in the aquarium, this process, taking place naturally at depths of more than 1000 fathoms, both sexes spawn only once and die a natural death when the reproductive function has been accomplished.

Dr. Schmidt concludes from his discoveries that the fresh-water eel, which lives the whole of its life after its metamorphosis in inland fresh waters, but is hatched and developed in the sea and returns to great depths of the ocean to breed, is to be regarded as properly a marine fish. On the other hand, there is good evidence that the earliest bony fishes were evolved in fresh water,

and some of the more primitive forms, such as the carp family, are still confined to rivers and lakes ; few of them live exclusively in salt water. Migration from river to sea or sea to river is not uncommon among these more primitive fishes, as, for example, in the salmon family. Here the migration is in the opposite direction from that of the eel ; salmon leave the sea and ascend rivers in order to spawn, and go down to the sea to feed and grow. The Pacific salmon (*Oncorhynchus yschawitscha*) offers a case almost as wonderful as that of the eel. It ascends great rivers of N.W. America and N.E. Asia to distances from 1000 to more than 2000 miles from the coast, and, like the eel, spawns only once and then dies.

J. T. CUNNINGHAM, from *Nature*, February 9, 1924.

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## THE MIGRATION OF THE LEMMINGS

The usual dwelling-place of the lemmings is in the highlands or fells of the great central mountain chain of Norway and Sweden. South of the Arctic Circle, they are, under ordinary circumstances, exclusively confined to the plateaus covered with dwarf birch and juniper above the conifer region, though in Tromsø and Finmarken they occur in all suitable places down to the level of the sea.

The nest is found under a tussock of dry grass or a stone, constructed of dry straws and usually lined with hair. The number of young in each nest is generally five, and at least two broods are produced annually. Their food is entirely vegetable, especially grass roots and stalks, shoots of the birch, reindeer-lichen and mosses, in search of which they form in winter long galleries

lemmings] The lemming is a small rodent, akin to our vole.

through the turf or under the snow. They are restless, courageous, and pugnacious little animals. When suddenly disturbed, instead of trying to escape, they will sit upright, with their back against a stone or other object, hissing or showing fight in a very determined manner.

What has given more popular interest to the lemming than to a host of other species of the same order is that certain districts of the cultivated lands of Norway and Sweden, where in ordinary circumstances they are quite unknown, are occasionally and at very uncertain intervals, varying from five to twenty or more years; literally over-run by an army of these little creatures. They steadily and slowly advance, always in the same direction and regardless of obstacles, swimming across rivers and even lakes of several miles in breadth, and committing considerable devastation on their line of march by the quantity of food they consume. In their turn they are pursued and harassed by a crowd of beasts and birds of prey, such as bears, wolves, foxes, dogs, wild cats, stoats, weasels, hawks, and owls, and are never spared by man. Even the domestic animals not usually predacious, such as cattle, goats, and reindeer, are said to join in the destruction, stamping them to the ground with their feet, and even eating their bodies. Numbers of lemmings also die from diseases apparently produced by overcrowding. None ever return by the course over which they have come, and the onward march of the survivors never ceases until they reach the sea, into which they plunge, and swimming in the same direction as before, perish in the waves. . . .

The chief facts that are certain regarding these migrations seem to be as follows : When a combination of favourable circumstances has occasioned a great increase



in the number of lemmings in their ordinary dwelling-places, a movement necessarily occurs at the edge of the elevated plateau, and a migration towards the low-lying land begins. The whole body slowly moves forward, advancing in the same general direction in which they started, but following more or less the course of the great valleys. They only travel by night, and they also stay in congenial places for weeks or months, so that, with unaccustomed abundance of food, notwithstanding all the destructive influences to which they are exposed, they multiply excessively during their journey, having families still more numerous and more frequently than in their usual homes. The progress may last from one to three years, according to the route taken and the distance to be traversed until the sea coast is reached, which, in a country so surrounded by water as the Scandinavian peninsula, must be the ultimate goal of such a journey. This may be either the Atlantic or the Gulf of Bothnia, according as the migration has commenced from the west or east side of the elevated plateau. Those that finally perish in the sea are only acting under the same blind impulse which has led them previously to cross smaller pieces of water with safety. •

SIR W. H. FLOWER and R. LYDEKKER,  
*The Study of Mammals.*

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## AT THE ZOO

ONE more Christmas sight we had, of course ; and that sight I think I like as well as Bob himself at Christmas, and at all other seasons. We went to a certain garden of delight, where, whatever your cares are, I think you can manage to forget some of them, and muse, and be not

unhappy ; to a garden beginning with a Z, which is as lively as Noah's ark ; where the fox has brought his brush, and the cock has brought his comb, and the elephant has brought his trunk, and the kangaroo has brought his bag, and the condor his old white wig and satin hood. On this day it was so cold that the white bears winked their pink eyes, as they flapped up and down by their pool, and seemed to say, ' Aha, this weather reminds us of our own dear homes.' ' Cold ! bah ! I have got such a warm coat,' says brother Bruin, ' I don't mind ' ; and he laughs on his pole and clucks down a bun. The squealing hyenas gnashed their teeth and laughed at us quite refreshingly at their window ; and, cold as it was, Tiger, Tiger, burning bright, glared at us red-hot through his bars, and snorted blasts of hell. The woolly camel leered at us quite kindly as he paced round his ring on his silent pads. We went to our favourite places. Our dear wambat came up, and had himself scratched very affably. Our fellow-creatures in the monkey-room held out their little black hands, and piteously asked for Christmas alms. Those darling little alligators on their rock winked at us in the most friendly way. The solemn eagles sat alone, and scowled at us from their peaks ; whilst little Tom Ratel tumbled over head and heels for us in his usual diverting manner. If I have cares in my mind, I come to the Zoo, and fancy they don't pass the gate. I recognise my friends, my enemies, in countless cages. I entertained the eagle, the vulture, the old billy-goat, and the black-pated, crimson-necked, blear-eyed, baggy, hook-beaked old marabou stork yesterday at dinner ; and when Bob's aunt came to tea in the evening, and asked him what he had seen, he stepped up to her gravely and said—

' First I saw the white bear, then I saw the black,  
Then I saw the camel with a hump upon his back.

CHORUS OF CHILDREN.

Then I saw the camel with a HUMP upon his back !

Then I saw the grey wolf, with mutton in his maw ;  
Then I saw the wambat waddle in the straw ;  
Then I saw the elephant with his waving trunk,  
Then I saw the monkeys—mercy, how unpleasantly  
they smelt !'

There, no one can beat that piece of wit, can he, Bob ?  
And so it is all over ; but we had a jolly time while you  
were with us, hadn't we ? Present my respects to the  
doctor ; and I hope, my boy, we may spend another  
merry Christmas next year.

W. M. THACKERAY.

## SEA-BIRDS IN THE DESERT

As the new day lightened we set forward. A little further we saw a flock of some great sea-fowl grazing before us, upon their tall shanks in the wilderness. I mused that (here in Nejd) they were but a long flight, on their great waggle wings, from the far sea-bord ; a morrow's sun might see them beyond this burning dust of Arabia ! At first my light-headed raffks mistook them for sheep-flocks, although only black fleeces be seen in these parts of Nejd : then having kindled their gun-matches, they went creeping out to approach them ; but bye and bye I saw the great fowl flag their wings over the wide desert, and the gunners returning. I asked, ' From whence are these birds ? ' ' Wellah from Mecca ' (That is from the middle Red Sea bord.)

CHARLES M. DOUGHTY, *Travels in Arabia Deserta*.

By kind permission of Messrs. Jonathan Cape, Ltd.

raffks] travelling companions.

## A VISIT FROM THE SEA

FAR from the loud sea beaches  
Where he goes fishing and crying,  
Here in the inland garden  
Why is the sea-gull flying ?

Here are no fish to dive for ;  
Here is the corn and lea ;  
Here are the green trees rustling.  
Hie away home to sea !

Fresh is the river water  
And quiet among the rushes ;  
This is no home for the sea-gull  
But for the rooks and thrushes.

Pity the bird that has wandered !  
Pity the sailor ashore !  
Hurry him home to the ocean,  
Let him come here no more !

High on the sea-cliff ledges  
The white gulls are trooping and crying,  
Heré among rooks and roses,  
Why is the sea-gull flying ?

ROBERT LOUIS STEVENSON.

By kind permission of Messrs. Chatto & Windus.

## A FAITHFUL DOG

I REMEMBER once during the siege of Montevideo, when I was with a small detachment sent to watch the movements of General Rivera's army, we one day overtook a man on a tired horse. Our officer, suspecting him of

being a spy, ordered him to be killed, and after cutting his throat we left his body lying on the open ground at a distance of about two hundred and fifty yards from a small stream of water. A dog was with him, and when we rode off we called it to follow us, but it would not stir from its dead master's side.

Three days later we returned to the same spot, to find the corpse lying just where we had left it. The foxes and birds had not touched it, for the dog was still there to defend it. Many vultures were near, waiting for a chance to begin their feast. We alighted to refresh ourselves at the stream, then stood there for half-an-hour watching the dog. He seemed to be half-famished with thirst, and came towards the stream to drink ; but before he got half-way to it the vultures, by twos and threes, began to advance, when back he flew and chased them away barking. After resting a few minutes beside the corpse, he came again towards the stream, till, seeing the hungry birds advance once more, he again flew back at them, barking furiously and foaming at the mouth. This we saw repeated many times, and at last, when we left, we tried once more to entice the dog to follow us, but he would not. Two days after that we had occasion to pass by that spot again, and there we saw the dog lying dead beside his dead master.

W. H. HUDSON, *The Purple Land*.

By kind permission of Messrs. Duckworth & Co

## FIDELITY

A BARKING sound the shepherd hears,  
A cry as of a dog or fox ;  
He halts—and searches with his eyes  
Among the scattered rocks :

And now at distance can discern  
A stirring in a brake of fern ;  
And instantly a dog is seen,  
Glancing through that covert green.

The dog is not of mountain breed ;  
Its motions, too, are wild and shy ;  
With something, as the shepherd thinks,  
Unusual in its cry :  
Nor is there any one in sight  
All round, in hollow or on height ;  
Nor shout, nor whistle strikes his ear ;  
What is the creature doing here ?

It was a cove, a huge recess,  
That keeps, till June, December's snow ;  
A lofty precipice in front,  
A silent tarn below !  
Far in the bosom of Helvellyn,  
Remote from public road or dwelling,  
Pathway, or cultivated land ;  
From trace of human foot or hand.

There sometimes doth a leaping fish  
Send through the tarn a lonely cheer :  
The crags repeat the raven's croak,  
In symphony austere ;  
Thither the rainbow comes—the cloud—  
And mists that spread the flying shroud ;  
And sunbeams ; and the sounding blast,  
That, if it could, would hurry past ;  
But that enormous barrier holds it fast.

Not free from boding thoughts, a while  
The shepherd stood ; then makes his way

O'er rocks and stones, following the dog  
As quickly as he may ;  
Nor far had gone before he found  
A human skeleton on the ground ;  
The appalled discoverer with a sigh  
Looks round to learn the history.

From those abrupt and perilous rocks  
The man had fallen, that place of fear !  
At length upon the shepherd's mind  
It breaks, and all is clear :  
He instantly recalled the name,  
And who he was, and whence he came ;  
Remembered, too, the very day  
On which the traveller passed this way.

But hear a wonder, for whose sake  
This lamentable tale I tell !  
A lasting monument of words  
This wonder merits well.  
The dog, which still was hovering nigh,  
Repeating the same timid cry,  
This dog had been through three months' space  
A dweller in that savage place.

Yes, proof was plain that, since the day  
When this ill-fated traveller died,  
The dog had watched about the spot,  
Or by his master's side :  
How nourished here through such long time  
He knows, who gave that love sublime ;  
And gave that strength of feeling, great  
Above all human estimate !

WILLIAM WORDSWORTH.

## NATURAL AFFECTION IN ANIMALS

THE more I reflect on the *στοργή* or natural affection of animals, the more I am astonished at its effects. Nor is the violence of its affection more wonderful than the shortness of its duration. Thus every hen is in her turn the virago of the yard, in proportion to the helplessness of her brood ; and will fly in the face of a dog or a sow in defence of those chickens which in a few weeks she will drive before her with relentless cruelty.

This affection sublimates the passions, quickens the invention, and sharpens the sagacity of the brute creation. Thus an hen, just become a mother, is no longer that placid bird she used to be ; but, with feathers standing on end, wings hovering, and clucking note, she runs about like one possessed. Dams will throw themselves in the way of the greatest danger in order to avert it from their progeny. Thus a partridge will tumble along before a sportsman, in order to draw away the dogs from her helpless covey. In the time of nidification the most feeble birds will assault the most rapacious. All *hirundines* of a village are up in arms at the sight of an hawk, whom they will persecute till he leaves that district. A very exact observer has often remarked that a pair of ravens, nesting in the rock of Gibraltar, would suffer no vulture or eagle to rest near their station, but would drive them from the hill with an amazing fury ; even the blue thrush, at the season of breeding, would dart out from the clefts of the rocks to chase away the kestrel or the sparrow hawk. If you stand

*στοργή*] natural affection ; pron. ‘ storgē.’

nidification] nesting.

*hirundines*] swallows.

remarked] observed.



near the nest of a bird that has young, she will not be induced to betray them by an inadvertent fondness, but will wait about at a distance, with meat in her mouth, for an hour together.

Should I further corroborate what I have advanced above by some anecdotes which I probably may have mentioned before in conversation, yet you will, I trust, pardon the repetition for the sake of the illustration.

The fly-catcher builds every year in the vines that grow on the walls of my house. A pair of these little birds had one year inadvertently placed their nest on a naked bough, perhaps in a shady time, not being aware of the inconvenience that followed ; but an hot, sunny season coming on before the brood was half-fledged, the reflection of the wall became insupportable, and must inevitably have destroyed the tender young, had not affection suggested an expedient, and prompted the parent birds to hover over the nest all the hotter hours, while, with wings expanded and mouths gaping for breath, they screened off the heat from their suffering offspring.

A further instance I once saw of notable sagacity in a willow-wren which had built in a bank in my fields. This bird a friend and myself had observed as she sat in her nest, but were particularly careful not to disturb her, though we saw she eyed us with some degree of jealousy. Some days after, as we passed that way, we were desirous of remarking how this brood went on ; but no nest could be found, till I happened to take up a large bundle of long green moss, as if it were carelessly thrown over the nest, in order to dodge the eye of any impertinent intruder.

A still more remarkable mixture of sagacity and instinct occurred to me one day, as my people were pulling

off the lining of a hot-bed in order to add some fresh dung. From out of the side of this bed leaped an animal with great agility, that made a most grotesque figure ; nor was it without great difficulty that it could be taken, when it proved to be a large white-bellied field-mouse, with three or four young clinging to her teats by their mouths and feet. It was amazing that the desultory and rapid motions of this dam should not oblige her litter to quit their hold, especially when it appeared that they were so young as to be both naked and blind !

To these instances of tender attachment, many more of which might be daily discovered by those that are studious of nature, may be opposed that rage of affection, that monstrous perversion of the *στοργή*, which induces some females of the brute creation to devour their young, because their owners have handled them too freely, or removed them from place to place ! Swine, and sometimes the more gentle race of dogs and cats, are guilty of this horrid and preposterous murder. When I hear now and then of an abandoned mother that destroys her offspring, I am not so much amazed, since reason perverted, and the bad passions let loose, are capable of any enormity ; but why the parental feelings of brutes, that usually flow in the most uniform tenor, should sometimes be so extravagantly diverted, I leave to abler philosophers than myself to determine.

GILBERT WHITE, *Natural History of Selborne*.

### MOTHER-LOVE

I WAS on my way home from hunting, and was walking up the garden avenue. My dog was running on in front of me.

desultory] jumpy.

Suddenly he slackened his pace, and began to steal forward as though he scented game ahead.

I looked along the avenue ; and I saw on the ground a young sparrow, its beak edged with yellow, and its head covered with soft down. It had fallen from the nest (a strong wind was blowing, and shaking the birches of the avenue) ; and there it sat and never stirred, except to stretch out its little half-grown wings in a helpless flutter.

My dog was slowly approaching it, when suddenly, darting from the tree overhead, an old black-throated sparrow dropt like a stone right before his nose, and, all ruffled and flustered, with a plaintive desperate cry flung itself, once, twice, at his open jaws with their great teeth.

It would save its young one ; it screened it with its own body ; the tiny frame quivered with terror ; the little cries grew wild and hoarse ; it sank and died. It had sacrificed itself.

What a huge monster the dog must have seemed to it ! And yet it could not stay up there on its safe bough. A power stronger than its own will tore it away.

My dog stood still, and then slunk back disconcerted. Plainly he too had to recognise that power. I called him to me ; and a feeling of reverence came over me as I passed on.

Yes, do not laugh. It was really reverence I felt before that little heroic bird and the passionate outburst of its love.

Love, I thought, is verily stronger than death and the terror of death. By love, only by love, is life sustained and moved.

IVAN TOURGÉNIEFF.

## VI

### HOW ARCHIMEDES MEASURED THE CROWN

IN the third century before Christ, when Syracuse was still a free and powerful state, Hiero, the Tyrant of that city, employed a goldsmith to make him a crown, for which purpose he caused an ingot of pure gold of a pound in weight to be served out from his treasury. In due course the goldsmith delivered the crown. It looked like pure gold ; when put in the scales it weighed a just pound ; but Hiero suspected that the goldsmith had abstracted some of the gold, and substituted an equal weight of silver. How could the fraud be detected ? In his perplexity the Tyrant turned to his cousin Archimedes, the famous mathematician.

Archimedes reflected. He knew, like other people, that gold is heavier than silver, and conversely that a pound of silver is bulkier than a pound of gold. Exactly how much bulkier he did not yet know, but he could ascertain that easily by melting a pound of gold and a pound of silver into moulds of regular shape. He could then do the same with the crown and compare the three volumes. He turned accordingly to Hiero and said, ‘ Sire, have I your permission to melt the crown ? ’ ‘ By no means,’ replied Hiero. ‘ It is a beautiful piece of work. You must try some other way.’

Archimedes was thus left with the problem of finding the volume of this very irregular solid, which defied

ordinary methods of measurement. For days he pondered over it in vain. But one day, when he was about to bathe, the bath chanced to be full to the brim ; and, as he lowered himself into it, the water slopped over. In an instant the solution of his problem flashed on him, and, springing from the bath, all naked as he was, he ran through the streets to the palace, crying ‘ *εὕρηκα*, *εὕρηκα* ’ (I have found it ! I have found it !).

What exactly had Archimedes found ? He had found out how to ascertain the volume of a solid without actually measuring it. He had seen that, when he lowered himself into the full bath, just so much water overflowed as made room for his body : his body, as we say, displaced its own bulk of water. He had no need now to melt the crown. By immersing it in a full basin, he made it displace its own volume of water, and the water he could measure easily by pouring it into a vessel of regular shape. In the same way he found the volume of a pound of pure gold and a pound of pure silver. Comparison showed that the crown was bulkier than the gold, less bulky than the silver. This was enough to expose the goldsmith’s fraud ; but Archimedes went on, and by mixing gold and silver in different proportions—but always up to a pound in weight—he arrived at a mixture which had the same volume as the crown.

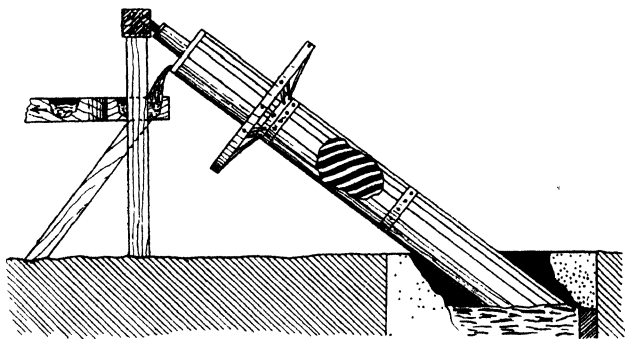
The problem of the crown began as a problem in Solid Mensuration. But it led Archimedes to inquire more deeply into the physical properties of liquids, and so to lay the foundation of a new science, the science of Hydrostatics. In the problem of the crown he had found that bodies completely immersed in water displace their own volume of water. But what of floating bodies ? These obviously do not displace their whole

volume of water, but only the volume of the part immersed. Using the same simple instruments, however, it occurred to Archimedes not only to measure but to weigh the overflow ; and he discovered this remarkable result—that bodies floating in water displace their own *weight* of water.

Archimedes now went further. Possibly while immersing the crown he had noticed that it felt lighter when he lowered it into the water, and again felt heavier as he raised it from the water. But feeling was not enough for the man of science. He must ascertain if possible *how much* weight it seemed to lose when immersed in the water and to regain when lifted out of it. He therefore weighed the crown in water, attaching it by a thread to one end of the beam of a balance, the other end of which was beyond the basin. By this means he found that the crown when immersed appeared to lose exactly the weight of the water displaced by its immersion. This is the famous Principle of Archimedes. It is true of any body that can be weighed in any liquid.

This Archimedes was a very great man. Besides his work in pure Mathematics he found out many useful inventions, such as the Archimedean screw, which raises water by the turning of a handle ; and though he himself regarded these as mere trifles, ‘the diversions of Geometry at play,’ and was of so high a spirit, says Plutarch, that he would not deign to leave behind him any written work on such subjects, they are the things on which his popular reputation chiefly rests. When he discovered the principle of the lever, he exclaimed in his elation ‘δός μοι ποῦ στῶ καὶ κινῶ τὰν γᾶν’ (‘Give me standing-room and I will move the earth’); and, though he could not move the earth for lack of a fulcrum, he

applied his device to the launching of ships. Towards the end of the Second Punic War, when Syracuse was besieged by the Romans, Archimedes turned his inventive genius to the defence of his native city. He constructed huge catapults which hurled stones at any range. He devised cranes which dropped stones and grappling irons on the Roman ships. He is even said



ARCHIMEDES'S SCREW

—and the story is less incredible than it sounds—to have fired the Roman ships in the harbour by concentrating the sun's rays on them by means of great concave mirrors, which acted like burning-glasses. The Romans went in such fear of him that if they saw as much as a rope or a pole protruding from the wall, they ran back crying, 'He is at it again.' But even the genius of Archimedes could not avert defeat. In 212 B.C. the city fell, and Archimedes perished in the sack of it. The Roman general Marcellus had given strict injunctions that his life should be spared. But a common soldier, roving the town for loot, came upon him as he sat on the ground absorbed in a geometrical problem, poring

over a figure which he had drawn in the dust. The Roman, not recognising him, demanded his name. Archimedes waved him away : ' Keep off my circles, fellow,' he said ; and the incensed legionary ran him through with his sword. He was 75 years old when he perished.

Archimedes, as I have said, thought little of his own mechanical inventions in comparison with his work in pure Mathematics. To his own mind his greatest triumph was the discovery of the relations between the volume and area of a sphere and the volume and area of the circumscribing cylinder. A hundred and fifty years after his death, Cicero discovered his tomb at Syracuse. It was overgrown with weeds and creepers ; when these were cleared away it was found to be surmounted by a sphere inscribed in a cylinder.

Adapted from *Plutarch*, *Tzetzes*, and the ancient *Life*.

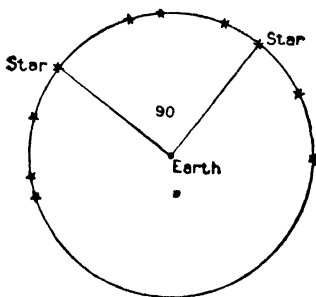
## HOW ERATOSTHENES MEASURED THE EARTH

IF you travel northward the Pole Star, seen each fine night of your journey, rises gradually higher in the heavens. Could you go so far you would come at last to a point where the Pole Star would be vertical over your head. That point would be the North Pole of the terrestrial sphere. All the other visible stars would make circles, small or great, round the Pole Star in the course of twenty-four hours, and none of them would set. On the other hand, if you travel southward the Pole Star sinks lower towards the horizon, until at last you come to a point where it is seen on the horizon. Then all the other fixed stars circling round it will rise and set, having exactly half their daily course above the



horizon and half below. The point of which this would be true would be a point on the Equator, the great circle round the globe half way between the two Poles. On the southern horizon, precisely opposite to the Pole Star in the north, you would see a group of four stars known as the Southern Cross. These stars are very close to the South Pole of the celestial sphere, although they are not precisely at the Pole and therefore rise and set.

Since the heavens appear as a hemisphere, it is clearly possible to measure the distance from the zenith—that is to say, the point vertically over your head—to the Pole Star or any other star, and to express that distance as the part of a circle. If you imagine a circle to be described by the swinging of a string with a chestnut at the end of it, then it is clear that the string may be said to move through half a circle, a quarter of a circle, or any smaller part of a circle. But the Alexandrian geometers divided the circle into 360 equal parts or degrees. Geometrically, therefore, we should say that the string had moved not through half a circle but through 180 degrees, and not through a quarter of a circle but through 90 degrees, and so for smaller angles, as, for instance, 45, 30, or 15 degrees. In the figure stars are represented upon the celestial sphere which appear from the earth to be separated from one another by 90 degrees.



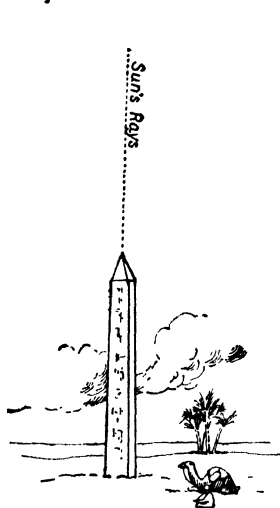
It follows from what has been said that if you travelled from the North Pole to the Equator, the Pole Star would

appear gradually to sink from the zenith to the horizon. In other words, it would appear to have moved through 90 degrees. Now if you reflect for a moment you will see that, since both at the Pole and at the Equator you would stand upright, with your feet pointing to the centre of the earth, and your head to the zenith, your body would have moved through an angle of 90 degrees on its journey from the Pole to the Equator. Reasoning thus, it flashed on some ancient mind that if on a journey the traveller's zenith had moved from the Pole Star to a point 90 degrees from the Pole Star, then the traveller himself must have gone a quarter way round the globe, or through 90 degrees of the terrestrial sphere. A moment's thought will show that, if this be true, then also if the traveller's zenith has moved 30 degrees, or 45 degrees, or any number of degrees from the Pole Star, he must himself have made a corresponding movement on the terrestrial sphere.

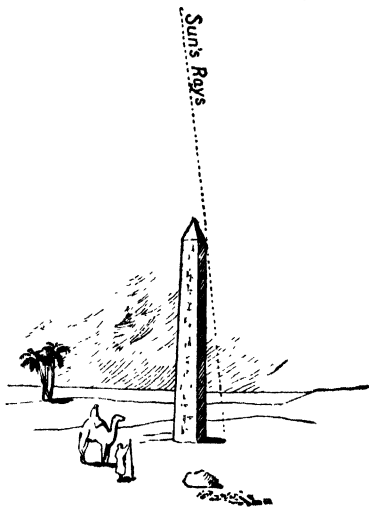
The Greeks, of course, never made the journey all the way from the Pole to the Equator, but they did move through distances of 30 and 40 degrees on the earth's surface. It was therefore possible for them, by observing the stars on the one hand and so ascertaining the degrees through which they had travelled, and, on the other hand, by counting the number of their paces or otherwise estimating in miles the distance travelled, to find out how many miles go to a degree on the earth's surface. But this is equivalent to saying that they could estimate the size of the terrestrial globe.

Such was the method which the great geographer Eratosthenes made use of, with the result that, without the help of instruments, he estimated the size of the globe with astonishingly small error. He did not, how-

ever, observe the Pole Star. He made his observations in the day-time from the sun, because the sun casts a shadow, the length of which can be measured. On the Thames Embankment in London to-day we have a great obelisk of granite which was brought some years



Obelisk at Syene on  
Midsummer Day.

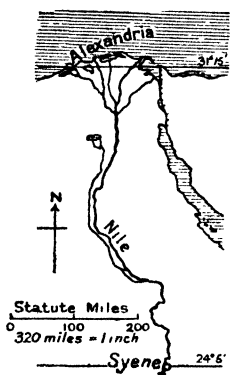


Obelisk at Alexandria on  
Midsummer Day.

ago from Alexandria. We know it as Cleopatra's Needle. It lay for weary centuries prone on the coast of Egypt, having fallen owing to the decay of the foundation on which it rested.

Now Eratosthenes found that on mid-summer day at a place called Syene up the Nile at the First Cataract, the sun was vertical overhead, or in other words at the zenith, and therefore cast no shadow from such an obelisk. On the same day, however, the sun cast a short shadow from a similar obelisk at Alexandria.

Measuring the length of this shadow, and comparing it with the height of the column, Eratosthenes was able to ascertain the number of degrees by which the midday sun failed to reach the zenith at Alexandria on the very day, that is to say midsummer day, when it did reach the zenith at Syene, as shown by the absence of a shadow. If we examine Fig. 2, which represents the shadow cast by the sun on midsummer day at Alexandria, we see that the length of that shadow is necessarily proportional to the distance of the sun from the zenith. This distance



is 7 degrees. Thus Eratosthenes obtained an angle in the heavens corresponding to the distance on the surface of the globe between Alexandria and Syene. These two places are nearly north and south of one another. The valley of the Nile between them, being exceedingly fertile and very valuable, had been measured with accuracy. Therefore Eratosthenes knew the distance in miles between Syene and Alexandria. So he was able to ascertain the length of a degree on the earth's surface, and also of course the circumference of the globe, since that measures 360 degrees.

Since the time of Eratosthenes, with the aid of accurate instruments, it has been shown that his calculation made the globe about one-tenth too large. We now know that in each degree there are sixty geographical or sixty-nine English statute miles. In other words, the circumference of the globe is rather more than 24,000 miles.

By observing the Pole Star at Alexandria and at Syene the Greeks were able to say how many degrees

each of these places was situated from the North Pole, and from the Equator. They termed these degrees of latitude, because the breadth of the known earth lay in a north and south direction. It has become customary to count degrees of latitude northward from the Equator. The latitude of the Equator is therefore 0 degrees, that of the North Pole is 90 degrees north. The latitude of the South Pole is 90 degrees south. Syene is situated in latitude 24 degrees north, and Alexandria in latitude 31 degrees north.

SIR HALFORD MACKINDER, *Distant Lands*.

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## HOW FRANKLIN DREW LIGHTNING FROM THE CLOUDS

THE immortal honour of having afforded the first experimental proof of the truth of this hypothesis [that lightning is electricity] belongs to Dr. Franklin, who truly realized the fable of Prometheus in bringing down fire from heaven. Reasoning from the many particulars in which lightning and electricity agree, such as their striking the highest and most pointed objects in their way, their taking the readiest and best conductors, their setting fire to inflammable bodies, their fusing metals, their rending some bodies, their paralysing or destroying animal life, he conceived the bold idea of ascertaining the truth of this doctrine by actually drawing down the lightning from the clouds. As pointed conductors attract the electrical fluid more easily than those of any other form, he conceived that pointed rods of iron fixed in the air, when the atmosphere was loaded with lightning, might draw from it the matter of thunderbolts

without noise or danger into the body of the earth. His account of this supposition is given by himself in the following words : ‘ The electric fluid is attracted by points. We do not know whether this property be in lightning ; but since they agree in all the particulars in which we can already compare them, it is not improbable that they agree likewise in this. Let the experiment be made.’

His original plan for putting this theory to a decisive test was to erect on some high tower a sentry-box from which should rise a pointed iron rod, insulated by being fixed in a cake of resin. Electrified clouds passing over this would, he conceived, impart to it a portion of their electricity, which would be rendered evident to the senses by sparks being emitted when a key, the knuckle, or other conductor, was presented to it. But as Philadelphia in his time afforded no opportunity of trying an experiment of this kind, he lost some years waiting for the construction of a spire, until at last the lucky thought occurred to him that it might be made in an easier manner by means of a common kite. He prepared one by fastening two cross-sticks to a silk handkerchief, which could not suffer so much from the rain as paper. To the upright sticks was affixed an iron point. The string was as usual of hemp, except the lower end, which was of silk, a bad conductor of electricity. Where the hempen string terminated a key was fastened. Provided with this simple apparatus he took the opportunity of the first approaching thunderstorm to walk into a field, where there was a shed proper for his purpose. But dreading the ridicule which too generally for the interests of science attaches itself to unsuccessful experiments in philosophy, he communicated his intention to no one but his son, who assisted him in raising the kite. A

considerable time elapsed before there was any appearance of success. One very promising cloud had passed over the kite without any effect, when, just as he was beginning to despair, he observed some loose threads of the hempen string to stand erect and avoid one another, just as if they had been suspended by the conductor of a common electrical machine. He now presented his knuckle to the key, and received a strong spark. Others succeeded, even before the string was wet; but when the rain began to descend the electric fire descended so copiously that a phial was charged, and all the experiments made which were then usually performed with electricity. How exquisite must his sensations have been when the success of his experiment showed him that he had discovered one of the grand secrets of Nature, and insured to himself a distinguished place among the discoverers whose genius has opened new fields of knowledge to man! Yet in his case exquisite joy seems to have been tinged with melancholy, for we are told that when he saw the fibres of the string erect themselves he uttered a deep sigh, and wished that moment to be his last, feeling that now he had immortalised his name.

G. HARTWIG, *Marvels over our Heads.*

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## GALILEO GALILEI, FOUNDER OF EXPERIMENTAL SCIENCE

### *Early Life*

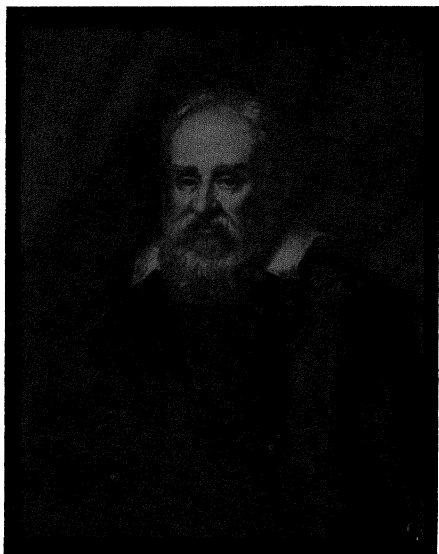
GALILEO GALILEI was born at Pisa, in the province of Tuscany in Italy, on the 18th of February, 1564. His father, Vincenzo Galilei, was an impoverished Florentine nobleman of much culture, high ideals, and breadth of

mind. He was a poor man, and he was naturally anxious that his son should adopt some definitely lucrative career. He saw his little Galileo exhibiting marvellous ingenuity in making toy contrivances, and he was much troubled by the thought that his son might wish to take up a scientific career. Vincenzo knew how hard it was to make a living in such a career, and he determined that if he could divert Galileo's mind from any such tendencies he would do so. Accordingly he decided to make his son a cloth-dealer. Luckily fate was against him. Galileo went to a convent school, and whatever he did, he did well. His father gave up the unequal struggle. The idea of making a merchant of such a boy was preposterous. A university career was inevitable; but at least, if he must take up a profession, then it should be as lucrative as possible. All this pointed to the medical profession, so to the University of Pisa went Galileo, at the age of seventeen years, to study for his medical degree.

However, fate would not be denied. Mechanical skill was there, and mathematical genius was there. Galileo knew no mathematics, but his genius could not be suppressed. Thus during a service in the Cathedral at Pisa, his attention was diverted from his devotions by the swinging of a chandelier above him. Its regularity of movement set him thinking. Galileo timed its swings. He had no watch—such things had not yet been invented—so he felt his own pulse and used that as his time-index. What particularly interested him was the fact that, although the oscillations were dying down, the time of swing yet remained unchanged. This fact is now universally recognized as what is known as the principle of *isochronism* in pendulums, and is applied in



the working of the modern clock. But Galileo's interest in it at the time was purely medical. He experimented at home with a metal ball suspended by a string of varying length, and found that the *time* of swing changed with the length—it was faster for shorter lengths and



GALILEO GALILEI

slower for longer. The outcome was his invention of the 'Pulsilogium'—an instrument for recording the pulse-rate of a patient. It was a simple enough contrivance. By rotating an index or pointer, a simple pendulum was wound up or unwound until its time of swing just coincided with the pulse-rate of the patient. The scale over which the pointer moved was graduated to give a direct reading of the number of beats per minute.

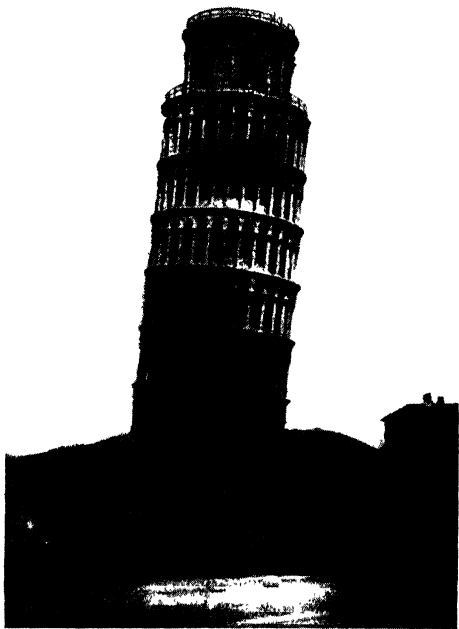
One day Galileo, while calling on a friend of the family, one Ottilio Ricci, a mathematical tutor to the Court of Tuscany, accidentally heard through an open door a lesson in Euclid being given to some pages. That chance lesson decided Galileo's fate. He begged his friend to give him some lessons, and soon he was deeply engrossed in his new-found joy ; for joy it was to him. It was not long before he had mastered Euclid's first six books. Nor was it long before the elder Galilei saw how things were going, and the career of medicine was finally abandoned.

Galileo now gave himself up whole-heartedly to a study of mathematics and physics. Among other things, he became a close student of Archimedes, and he wrote a thesis on the 'hydrostatic balance,' suggesting improvements on the Syracusan philosopher's original design. This brought Galileo to the notice of Guido Ubaldi, at that time the premier mathematician of Italy, and through him to Ferdinand dei Medici, grand duke of Tuscany. It was the patronage of this latter gentleman which secured for him, at the age of twenty-six years, his first professional appointment—that of professor of mathematics in his own university of Pisa.

### *Galileo at Pisa*

Galileo was not long in asserting for himself that independence of mind which we have seen to be so rare in those days. He was not indeed alone in his indictment of Aristotelian physics. For example, the writings of Copernicus were making silent headway amongst somewhat timorous adherents, who seldom spoke out, so many were there to offend. Galileo, however, did not hesitate. With a born genius for experiment, a trenchant pen for the recording of facts, and an honesty

which refused to permit his conscience to sanction as fact that which his laboratory proved to be fiction, there could be only one result.



THE LEANING TOWER, PISA

Galileo's older colleagues knew nothing of experiments. The very idea implied to them a sort of hideous witchcraft—a profanation of the sanctity of the Aristotelian doctrine. One part of the doctrine, it will be remembered, stated that a heavy body will fall to the earth more rapidly than a lighter one. Thus a 100 lb. weight

will fall in one-hundredth the time it will take a 1 lb. weight to fall through a given distance. One would scarcely dare claim much pluck or originality for the idea of dropping two such weights simultaneously from a given height in order to put the great Aristotle to the test ; yet this simple experiment was in fact one of the outstanding achievements of scientific history. It is astonishing to think that such an experiment had not been deliberately performed for at least two thousand years. Thinkers had come and gone, yet this absurd fiction of the great Greek philosopher had persisted through the ages. And the men who were considered *par excellence* the great minds of the sixteenth century refused the evidence of their own senses ! It is a problem for the psychologist.

The story of the experiment of the leaning tower of Pisa is well known. It speaks volumes for the vigorous personality of young Galileo that he got his audience together at all. There is real humour in the thought. What an unwilling audience they must have made ! What angry mutterings must have accompanied the preliminaries as this young upstart slowly mounted the tower. And then, no doubt, a hush of unwilling expectancy as the signal was given for the simultaneous release of heavy and light weights. Surely it is difficult to believe that these aged philosophers had not, at some time or other in their lives, seen two such weights drop in more or less the same time. They must surely have felt, in their heart of hearts, that they were fighting a losing fight, and that this young firebrand of a Galileo was a true herald of a new era.

Crash ! With simultaneous thud those two weights did indeed reach the ground at the same time. It was

truly a great moment in the history of the world. Yet the blind prejudice of an unreasoning hero-worship was too strong even for the evidence of the senses of sight and sound. 'Let us go home again,' said they, 'and look it up.' So back they went to their old books, and there sure enough it was—a heavy body falls faster than a lighter body. Besides, and the thought was like balm to their wounded sensibilities, does not the Church sanction the views of the great Aristotle? So the net result of it all was that whilst they secretly feared Galileo, they openly disliked him. It was but the beginning of his career, yet his enemies multiplied rapidly.

Galileo persevered in his study of motion—particularly the motion of falling bodies. He saw clearly that falling bodies have accelerated motion—that is to say, the velocity is increasing. He sought out what was the law of this increase in velocity. He soon satisfied himself that *the velocity is proportional to the time of falling*; that is to say, that a falling body received equal increments of velocity in equal increments of time. He tested this experimentally by means of an inclined plane—a board twelve yards long, down the centre of which was cut a trough one inch wide. This trough was lined with smooth parchment so as to minimize frictional errors. A highly polished and well-rounded brass ball was allowed to run down this plane, and the time was carefully noted for a wide range of varying inclinations. Galileo had no clock with which to measure time, but he was too gifted an experimentalist to be beaten by that fact. He arranged a water pail with a small outlet at the bottom. The escaping water was caught in a cup, the period of flow being timed to begin and end for the exact duration of his experiment

—namely, the period of roll of his brass ball down the inclined plane. He then carefully weighed the water, and of course this weight was a measure of the time of descent of the ball down the inclined plane.

Galileo found that, within the limits of experimental error, the *distance of descent was proportional to the square of the time*. This is in accordance with the well-known formula for falling bodies

$$S = \frac{1}{2}gt^2.$$

Galileo had no difficulty in realizing that the results for the inclined plane would apply equally to falling bodies, since by gradually increasing the steepness of slope to ninety degrees, the latter case emerges as a special limit of the general problem. . . .

One other important principle in mechanics was brought out by Galileo at this period, in his *Della Scienza Meccanica*, published in 1592. It is concerned with the theory of mechanical powers, and his statement in effect was this: that a force which can move a weight of two pounds through one foot will also move a weight of one pound through two feet. That is to say, the lighter the weight to be overcome, the greater is the distance in the corresponding ratio through which the force will move it, but under no circumstances can this advantage be exceeded.

This is a most important proposition in Statics, and was one which, much about this time, was also being investigated by the famous Stevinus, of Bruges, from a somewhat more practical standpoint.

The days of Galileo at Pisa were numbered, as things were fast reaching a climax. He had, by his outspoken criticisms, multiplied his enemies rapidly. The end came as a result of a difference he had with one Giovanni

dei Medici, an influential personage who had invented a scheme for cleansing the port of Leghorn. Galileo's opinion was sought, and honest man that he was, he condemned it outright. Later experience of the scheme fully justified Galileo's condemnation, but the mischief was done. The inventor was mortally offended, and his hostile influence proved too strong for Galileo, who was compelled to resign his chair at Pisa. The death of his father at this period left him with some responsibility in the matter of assisting to provide for his sisters, so that when in 1592 the Senate of Venice offered him the professorship of mathematics at the University of Padua, Galileo eagerly accepted, and so began for himself a new era of brilliance and fame.

### *Padua*

Galileo went to Padua in 1592 in no chastened spirit. Pisa was his native city, and the call of home was strong in him. There is no doubt that he keenly felt his exile, for such it really was. Yet he threw himself wholeheartedly into his professional duties. His inaugural lecture was a triumph of eloquence, and his fame rapidly increased. People of the highest rank flocked to hear him, and his school of natural philosophy was filled to overflowing, so that frequently he had to abandon his class room and lecture in the open air.

One of the first-fruits of his labours at Padua was the invention of what was perhaps the first thermometer. This consisted of a flask *A* with a narrow neck, inverted, with its end *B* dipping into a small reservoir of coloured water. Some of the air within the flask having been withdrawn, the decreased pressure of the air so produced causes the water to rise in the neck. The position of the

head of the column was indicated by a scale *SS* at the side. The effect of heat is much greater upon air than upon water, and hence, when the temperature rose, the liquid fell in the stem, and *vice versa*. The chief error in this instrument arises from the fact that not only does the position of the liquid in the stem depend upon the temperature, but also upon the barometric pressure. Galileo, however, was probably unaware of this, as the barometer was not invented till about 1642.

IVOR B. HART,

*Makers of Science* [Oxford Univ. Press, 1923].

## TO NIGHT

MYSTERIOUS Night ! When our first parent knew  
Thee from report divine, and heard thy name,  
Did he not tremble for this lovely frame,  
This glorious canopy of light and blue ?  
Yet 'neath a curtain of translucent dew,  
Bathed in the rays of the great setting flame,  
Hesperus with the host of heaven came,  
And lo ! Creation widened in man's view.  
Who could have thought such darkness lay concealed  
Within thy beams, O sun ! or who could find,  
Whilst fly and leaf and insect stood revealed,  
That to such countless orbs thou mad'st us blind !  
Why do we then shun death with anxious strife ?  
If Light can thus deceive, wherefore not Life ?

J. BLANCO WHITE.

## THE SOLAR SYSTEM

### *Primitive Ideas*

OF all the phenomena of astronomy the first and the most obvious is that of the rising and setting of the sun. We may assume that in the dawn of human intelligence these daily occurrences would form one of the first



problems to engage the attention of those whose thoughts rose above the animal anxieties of everyday existence. A sun sets and disappears in the west. The following morning a sun rises in the east, moves across the heavens, and it too disappears in the west ; the same appearances recur every day. To us it is obvious that the sun, which appears each day, is the same sun ; but this would not seem reasonable to one who thought his senses showed him that the earth was a flat plain of indefinite extent, and that around the inhabited regions on all sides extended, to vast distances, either desert wastes or trackless oceans. How could that same sun, which plunged into the ocean at a fabulous distance in the west, reappear the next morning at an equally great distance in the east ? The old mythology asserted that, after the sun had dipped in the western ocean at sunset (the Iberians, and other ancient nations, actually imagined that they could hear the hissing of the waters when the glowing globe was plunged therein) it was seized by Vulcan and placed in a golden goblet. This strange craft with its astonishing cargo navigated the ocean by a northerly course, so as to reach the east again in time for sunrise the following morning. By certain of the earlier physicists it was believed that in some manner the sun was conveyed by night across the northern regions, and that darkness was due to lofty mountains, which screened off the sunbeams during the voyage.

In the course of time it was thought more rational to suppose that the sun actually pursued some route below the solid earth during the darkness of night. The early astronomers had, moreover, learned to recognise the

Iberians] inhabitants of Spain.

Vulcan] the Fire-God of the Romans = the Greek Hephaistos.

fixed stars. It was noticed that, like the sun, many of these stars rose and set in consequence of the diurnal movement, while the moon obviously followed a similar law. Philosophers thus taught that the various heavenly bodies were in the habit of actually passing beneath the solid earth.

By the acknowledgment that the whole contents of the heavens performed these movements, an important step in comprehending the constitution of the universe had been definitely taken. It was clear that the earth could not be a plain extending to an indefinitely great distance. It was also obvious that there must be a finite depth to the earth below our feet. Nay, more, it became certain that whatever the shape of the earth might be, it was at all events something detached from all other bodies, and poised without visible support in space. When this discovery was first announced it must have appeared a very startling truth. It was so difficult to realise that the solid earth on which we stand reposed on nothing ! What was to keep it from falling ? How could it be sustained without tangible support, like the legendary coffin of Mahomet ? But difficult as it may have been to receive this doctrine, yet its necessary truth in due time commanded assent, and the science of Astronomy began.

### *Ptolemy*

Ptolemy, following Pythagoras, Plato, and Aristotle, acknowledged that the earth's figure was globular, and he demonstrated it by the same arguments that we employ at the present day. He also discerned how this mighty globe was isolated in space. He admitted that the diurnal movement of the heavens could be accounted for by the revolution of the earth on its axis, but

unfortunately he assigned reasons for the deliberate rejection of this view. The earth, according to him, was a fixed body ; it possessed neither rotation round an axis nor translation through space, but remained constantly at rest in what he supposed to be the centre of the universe. According to Ptolemy's theory the sun and moon moved in circular orbits around the earth in the centre. The explanation of the movements of the planets he found to be more complicated, because it was necessary to account for the fact that a planet sometimes advanced and that it sometimes retrograded. The ancient geometers refused to believe that any movement, except revolution in a circle, was possible for a celestial body : accordingly a contrivance was devised by which each planet was supposed to revolve in a circle, of which the centre described another circle around the earth.

Although the Ptolemaic doctrine is now known to be framed on quite an extravagant estimate of the importance of the earth in the scheme of the heavens, yet it must be admitted that the apparent movements of the celestial bodies can thus be accounted for with considerable accuracy. This theory is described in the great work known as the *Almagest*, which was written in the second century of our era, and was regarded for fourteen centuries as the final authority on all questions of astronomy.

### *Copernicus*

Such was the system of Astronomy which prevailed during the Middle Ages, and was only discredited at an epoch nearly simultaneous with that of the discovery of the New World by Columbus. The true arrangement

advanced . . . retrograded] went forward or backward, *i.e.* among the fixed stars.

of the solar system was then expounded by Copernicus in the great work to which he devoted his life. The first principle established by these labours showed the diurnal movement of the heavens to be due to the rotation of the earth on its axis. Copernicus pointed out the fundamental difference between real motions and apparent motions ; he proved that the appearances presented in the daily rising and setting of the sun and the stars could be accounted for by the supposition that the earth rotated just as satisfactorily as by the more cumbersome supposition of Ptolemy. He showed, moreover, that the latter supposition must attribute an almost infinite velocity to the stars, so that the rotation of the entire universe around the earth was clearly a preposterous supposition. The second great principle, which has conferred immortal glory on Copernicus, assigned to the earth its true position in the universe. Copernicus transferred the centre, about which all the planets revolve, from the earth to the sun ; and he established the somewhat humiliating truth, that our earth is merely a planet pursuing a track between the paths of Venus and of Mars, and subordinated like all the other planets to the supreme sway of the sun.

### *Galileo*

The discovery of the four chief satellites [of Jupiter] may be regarded as an important epoch in the history of astronomy. They are objects situated in a remarkable manner on the border-line which divides the objects visible to the unaided eye from those which require telescopic aid. It has been frequently asserted that these objects have been seen with the unaided eye ; but without entering into any controversy on the matter, it

is sufficient to recite the well-known fact that, although Jupiter has been a familiar object for countless centuries, yet the sharpest eyes under the clearest skies never discovered the satellites until Galileo turned the newly invented telescope upon them. This tube was no doubt a very feeble instrument, but very little power suffices to show objects so close to the limit of unaided eye visibility.

The discovery of Jupiter's satellites afforded the great confirmation of the Copernican theory. Copernicus had asked the world to believe that our sun was a great globe, and that the earth and all the other planets were small bodies revolving round the great one. This doctrine, so repugnant to the theories previously held, and to the immediate evidence of our senses, could only be established by a refined course of reasoning. The discovery of Jupiter's satellites was very opportune. Here we had an ocular demonstration of a system, though on a much smaller scale, identical with that which Copernicus had proposed. 'As in the case of the spots on the sun, Galileo's announcement of the discovery was received with incredulity by those philosophers of the day who believed that everything in nature was described in the writings of Aristotle. One eminent astronomer, Clavius, said that to see the satellites one must have a telescope which would produce them; but he changed his mind as soon as he saw them himself. Another philosopher, more prudent, refused to put his eye to the telescope lest he should see them and be convinced. He died shortly afterwards. "I hope," said the caustic Galileo, "that he saw them on his way to heaven."'<sup>1</sup>

SIR ROBERT S. BALL, *The Story of the Heavens*.

By kind permission of Messrs. Cassell & Co., Ltd.

<sup>1</sup> Quoted from Newcomb's *Popular Astronomy*.

NOTES.—‘The legendary coffin of Mahomet.’ Mahomet, an Arabian prophet, founded the Mohammedan religion in the seventh century of our era. His coffin was believed to hang suspended between heaven and earth.

‘Ptolemy’—an Alexandrian astronomer, died about 150 A.D.

‘Pythagoras, Plato, and Aristotle’—ancient Greek philosophers. It is true that the Greeks in general believed that the earth was at rest in the centre of the universe. But there was one remarkable exception. About 250 B.C. Aristarchus of Samos advanced these hypotheses: (1) that the fixed stars and the sun are at rest; (2) that the earth revolves in a circle round the sun as centre; and (3) that it rotates at the same time about its own axis. This is, in fact, the Copernican theory. But it failed to convince the ancients, and was ignored till Copernicus revived it in 1542. (Copernicus had heard of Aristarchus’s views.)

‘The newly invented telescope.’ The telescope was probably invented by Hans Lippershey, a spectacle maker of Middelburg. But Galileo was the first to make telescopes fit for astronomical work, and to turn them upon the stars.

## SPINNING TOPS

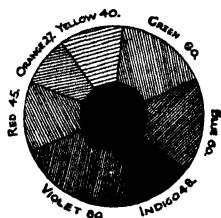
A DICTIONARY definition of a top is ‘an inverted conoid which children play with by whirling it on its point.’

Before you have finished studying this chapter and performing the experiments detailed therein, you will probably have become fully convinced that a top, more especially when rotating, is much more than this.

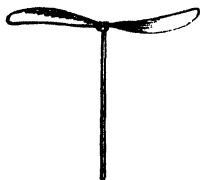
In this book we are concerned only with tops of a certain size—such as can be perceived by ordinary vision. It must not, however, be forgotten that the principle of an ordinary spinning-top has an important bearing on some of the most wonderful phenomena in magnetism and light.

Some extraordinary differences are manifested by a body that is stationary and the same body when rotating. Spin a copper disc between the poles of a powerful electro-magnet, and then switch on the current; the spinning movement is at once arrested, as if a most powerful mechanical brake had been applied.

Take a disc of cardboard coloured as directed in the figure, and set it *rapidly* spinning. All the colours disappear as if by magio, and a white disc only is seen. As the rotation dies down, the colours again reappear.



Again, if we take the little penny helicopter toy shown in the figure and roll it off the hand, so as to give it a rotatory (lifting) motion, it will rise into the air, illustrating several important principles in aerodynamics.



Finally, we take a spinning-top itself. It possesses a strong and remarkable will of its own. When knocked (not too hard) it does not fall over, but glides away with a peculiar sidelike circling movement. If spun on a slate it may be tossed into the air, and no longer comes down anyhow, as it would do if it were not spinning, but on its point. Other experiments of a similar character can easily be devised ; and we shall soon become convinced of the following most important fact, that *a body when spinning manifests an extraordinary and strong dislike to change the plane in which it is rotating, and when disturbed it does not move off in the direction of the disturbing force.*

Take a round stone and roll it along a smooth path. After rolling some distance it comes to rest, partly owing to the friction between it and the ground, partly to its weight, due to the attraction of the earth or gravity (it is really this of course that causes the friction), and partly to the resistance of the air.

Take the same stone and roll it along a large smooth level slab of ice, and notice how much farther it rolls. Substitute a billiard ball for the stone, and this same distance is again greatly increased. Notice also how the body always travels in a straight line unless acted on by some force tending to make it travel otherwise.

By these and similar experiments we are led to the conclusion that if all friction and other forces that act as brakes were removed, a body once started in a certain direction would go on moving in a straight line in that course for ever.

Suspend a bowl or large cup by three cords, and twist them by turning the cup round and round. Fill the cup very nearly full with water. Directly the hand is withdrawn, the torsion of the cords causes the cup to rotate, and the water will be found to describe a circle on the floor, flying off at a tangent from the cup. The same experiment can be shown in even a more effective manner by dipping a mop in a pail of water and twirling the handle round and round between the hands.

We thus see that when a top is spinning, all the particles of which it is composed have a tendency to fly off at a tangent, and would do so if the force of cohesion between the particles did not bind them together and keep them from so doing. In the case of the bowl of water which, when spinning, is nothing more or less than a fluid top, the power of cohesion was so small that the centrifugal force was sufficient to overcome it, and the water was scattered.

Now when a top is spinning quite steadily, popularly known as 'sleeping,' all the various thin horizontal layers of which we may consider it to be made up are moving in one plane, or, to speak more correctly, in a



series of parallel planes. The various parts of the top are all tending to fly off in a series of parallel planes, which is the same thing, so far as we are now concerned, as if they were all in one plane. Before the top can fall this plane of rotation has to be altered, and moved through an angle approximately of ninety degrees. This is in direct contradiction to the idea of flying off at a tangent and travelling in a straight line, for by geometry a straight line must be entirely in one plane. When a top is rapidly rotating, the various particles of which it is made up are moving in some particular series of parallel planes, and they have a tendency to fly off along this particular set of planes. The axis of rotation cannot be altered without the application of some force. The top is maintained spinning in an upright position by a combination of two forces: (1) the pull of the earth downwards, and (2) the forces due to its rotational movement—acting horizontally in all directions at once.

A spinning or rotating body acquires something more than a dislike to changing its axis of rotation. It maintains also a remarkable rigidity. Let us again have recourse to experiment:

Take a disc of fairly strong—but not stiff—paper, a foot or eighteen inches in circumference, and fasten it to some little mechanical device by which it can be rapidly rotated. The piece of paper is no longer loose, flexible, and flabby, but stiff, rigid, resonant, and unyielding.

Slip a piece of flexible chain over a flat pulley, and set the pulley in rapid rotation. Whilst it is so revolving, take a stick and slip the chain quickly off the pulley. It will fall to the ground, but instead of collapsing, it bounces up and goes running along the ground like an ordinary iron or wooden hoop. Its spin has given it

two entirely new characteristics, viz., *rigidity* and *elasticity*.

Every body possesses three principal axes about which it can rotate. Take for instance a cubical block of wood : a hole can be bored through it and an axle (on which it can rotate) be inserted from top to bottom, from side to side—left to right or *vice versâ*—and from front to back. Similarly with any other body. In the case of a lemon, an axis can be inserted from end to end, the longer axis, or through the middle at right angles to it, the shorter axis. Now under certain conditions, generally dependent on whether the body be supported above or below its centre of gravity, it develops during its spin a preference for rotating about some particular axis. A struggle takes place between the desire not to change its plane of rotation, and its antipathy to spin about any other axis than the preferred one. In the end, if the spin be a good one, the latter always wins.

Take a lemon, and, grasping one end in the fingers and thumb of each hand, give it as hard a spin as you can about its shorter axis on a smooth table. The lemon commences spinning, of course on its side, but soon a violent wobbling motion sets in, and finally the lemon rises up on end and continues to spin to the finish in that position.

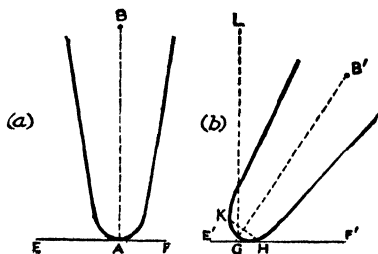
Try the same experiment with a hard-boiled egg, and a cocoa-nut from which the milk has been extracted.

Why is a top circling round and round able to rise to a more erect position—sometimes to all appearance a perfectly vertical one?

In order to make a spinning body when circling (*i.e.* precessing) rise to a more upright position, it is necessary in some way to quicken this precessing movement.

When, therefore, we see a top 'go to sleep,' we know that there is some force at work doing this. Now as the top is not touched during the process, the only cause that can produce this effect is the friction between the peg and the table or floor, for nothing else save the air is touching it, and the skin friction between the atmosphere and the surface of the spinning top is insufficient to influence its movement to such an extent.

The accompanying figure is a representation on a very enlarged scale of the vertical section of the peg of a top. In (a) the top is spinning in an upright position, and the axis of the spin,  $AB$ , is vertical. It is spinning on the surface  $EF$ , on its lowest point  $A$ .



In (b) it is inclined at an angle to the vertical  $GL$ , and is spinning about the axis  $GB'$ . Now imagine  $GB'$  to be the axle of a wheel, of which the diameter and position are represented by  $KH$ , rolling on the table. As this wheel rotates, the rotation (supposed in the same direction as the hands of a clock lying face upwards on the table) will cause it to roll towards the centre. But the circling movement is doing the same thing, for a spinning body supported below its centre of gravity always precesses in the same direction as its spin. Now if the speed of rotation is sufficiently high, the spin will want to roll the top faster than the precession will permit it to roll, and therefore the top will rise to a more vertical position.

For it is obvious that the more upright the top becomes,

the smaller becomes the diameter of the wheel as it were on which it is rolling, or the more rapid can be the rotation for a given distance of circling travel.

A similar explanation can be given for the rise to uprightness of any body spinning, and supported below its centre of gravity.

V. E. JOHNSON, *Mechanics and Some of its Mysteries*.

## BOOMERANGS

AMONG the various weapons and contrivances of savages, none probably has aroused greater interest than the boomerang of the native Australians.

The reason of course is on account of its apparent paradoxical behaviour. Simple as it looks, there is a considerable mystery about the implement, and it has indeed had almost miraculous properties ascribed to it.

Why? Because it is said to be able to describe the most wonderful curves and figures in the air; to hit the object aimed at (a bird, say) and return to the thrower; to fly round a tree or building and return on the other side; to come back and circle round the thrower and even fall far behind him.

Now, as to whether the original boomerangs of the Australian natives will do all this or even part of it seems much open to question. Their boomerangs are, with a few exceptions, very rudely shaped curved sticks—no doubt very effective as missiles, but certainly not capable of doing all that the typical boomerang is supposed to do. More than one traveller in the Island Continent has declared the returning boomerang to be a myth. Most certainly it is not so.

There is no difficulty in constructing boomerangs that

will perform all the feats just mentioned, with one exception: they cannot be made to hit the quarry and return to the hunter, unless the contact be so slight as to have no effect upon the course of the implement.

The boomerang may take a great variety of forms, but one of the best, if not the best, is the following (see figure).



It is constructed of a thin piece of hard tough wood, left flat on one side but rounded on the other, with sharpened edges and rounded ends, and bent in the middle in its own plane at an angle of about 120 degrees. The greatest thickness is about one-third of an inch; length two to two and a half feet; greatest breadth about an inch and a half. Instead of being steamed and bent to the required angle, two pieces neatly mortised together may be used, but the former method is to be preferred. Such is the ideal boomerang. Held by one hand, it can be hurled horizontally (or approximately so) through the air in such a manner as rapidly to rotate it. It then 'skims' through the air.

Cut out from an ordinary postcard the shape of a boomerang, as shown in the figure; stick one end beneath your left thumb nail, flick or snap it with your right forefinger, and send it flying across the room. Choose a large room free from obstacles, or an open space on a calm day. When this little boomerang has reached the end of its flight what does it do? It at once starts to return.

This experiment is in reality similar to that in which a conjuror throws cards from the theatre stage into the gallery. The feat is at first sight a very remarkable one,


but its success depends entirely on so throwing the card that it shall rapidly revolve in its own plane. If it commences to wobble, the resistance of the air will immediately stop it. Once so started, it will keep on flying until the energy put forth in throwing it is used up. It keeps on flying edge first owing to principles which have already been discussed in a previous chapter, for the boomerang is only another form of a spinning-top.

But why does it return to the sender? Simply because it is easier for it to do that than to do anything else.

Suppose it has flown out from the sender to the half of a sweeping oval curve, at an angle inclined some 30 degrees to the horizontal, and has arrived at the highest point of its flight. The force which propelled it has been used up—but it is still spinning. Gravity, or the attraction of the earth, which has never ceased to act upon it, now has the upper hand, and it commences to fall. It slides down the same plane by which it went up. To go in any other direction it would have to change its plane, and this its spin prevents it doing; thus it tends to return in the direction of the thrower.

The force of the throw gives the boomerang a strong tendency to move in a certain direction. If it had no spin, its edges cutting the air in an irregular manner would at once set up movements which would soon become so excessive as to result in its turning over and following a course totally different from that imparted to it by the thrower.

Suppose now that instead of making the boomerang flat on both sides, we leave one side flat and make the other round so that a vertical section is as in the figure. If we throw a boomerang of this type in such a manner

that the curved side when the implement is moving horizontally is uppermost, it will be found that it possesses greatly improved soaring powers. A boomerang of such section as shown in the figure possesses considerable lifting powers even when moving horizontally  through the air without any angle of inclination to the line of flight. When the boomerang is spinning hard and moving slowly through the air it tends to keep its plane of rotation constant. When interesting flights are desired, it should not be thrown too violently; a sharp jerk at the end of the act of throwing has the effect of imparting a good spin, and a good spin is essential for good flights.

Experiments should only be made out of doors on a calm day. If there be a slight wind, throw the boomerang against it; in windy weather the flight is erratic and the boomerang is liable to 'go anywhere and do anything.'

The question may be asked, how was it that such a scientific instrument as the boomerang was invented by the black-fellows of Australia—very low in the scale even of savage races? Doubtless it was by accident. It must be remembered that the return flight of the boomerang is only half of what the weapon is capable of, and in the early stages of 'boomeranging' (to coin a word) probably the less important half. A well designed boomerang is an instrument which, if skilfully thrown by even a weak man, will travel quite one hundred yards before commencing to return. Such sticks would then first of all be found very suitable for killing all kinds of small game. When the game was not hit it would be found, in course of time, that certain

sticks showed a decided tendency to return ; and these would eventually be specially employed for killing wild ducks and fowls on marshes and swamps, where the missiles thrown were not so easily recovered. The bent sticks of the Zuin Indians, which they used for flinging at jack rabbits and breaking their legs, represent the boomerang in its initial stage. On ancient Egyptian monuments men are represented in the act of throwing curved sticks. Possibly they may have been used for killing big birds in the sedges of the Nile. Their general appearance is not, however, such as would lead one to suppose that they would return.

V. E. JOHNSON,  
*Mechanics and Some of its Mysteries.*

## CHEMICAL HISTORY OF A CANDLE

You see then, in the first instance, that a beautiful cup is formed. As the air comes to the candle it moves upwards by the force of the current which the heat of the candle produces, and it so cools all the sides of the wax or tallow, as to keep the edge much cooler than the part within ; the part within melts by the flame that runs down the wick as far as it can go before it is extinguished, but the part on the outside does not melt. If I made a current in one direction, my cup would be lop-sided, and the fluid would consequently run over—for the same force of gravity which holds worlds together holds this fluid in a horizontal position, and if the cup be not horizontal, of course the fluid will run away on guttering. You see, therefore, that the cup is formed by this beautiful regular ascending current of air playing upon all sides, which keeps the exterior of the candle cool.



Then there is the question as to the way in which the fluid wax or tallow gets out of the cup, up the wick, and into the place of combustion. You know that the flames, on these burning wicks in candles made of bees-wax, stearin, or spermaceti, do not run down to the wax or other matter, and melt it all away, but keep to their own right place. They are fenced off from the fluid below, and do not encroach on the cup at the sides. A combustible thing like that, burning away gradually, never being intruded upon by the flame, is a very beautiful sight; especially when you remember what a vigorous thing flame is—what power it has of destroying the wax itself when it gets hold of it, and of disturbing its proper form if it come only too near.

But how does the flame get hold of the fuel? It is by what is called *capillary attraction* that the fuel is conveyed to the part where combustion goes on, and is deposited there, not in a careless way, but very beautifully in the very midst of the centre of action, which takes place around it. Capillary attraction is that kind of action or attraction which makes two things that do not dissolve in each other still hold together. When you wash your hands, you wet them thoroughly; you take a little soap to make the adhesion better, and you find your hand remains wet. This is by capillary attraction. And what is more; if your hands are not soiled, if you put your finger into a little warm water, the water will creep a little way up the finger, though you may not stop to examine it.

I have here a substance which is rather porous—a column of salt—and I will pour into the plate at the bottom a saturated solution of salt which cannot absorb more; so that the action which you see, will not be due

to its dissolving anything. We may consider the plate to be the candle and the salt column the wick, and the salt solution (which I have coloured blue that you may see the action better) the melted tallow. You observe that, now I pour in the blue fluid, it rises and gradually creeps up the salt higher and higher ; and provided the column does not tumble over, it will go to the top. If this blue solution were combustible, and we were to place a wick at the top of the salt, it would burn as it entered into the wick.

When you wash your hands you take a towel to wipe off the water, and it is by that kind of wetting, or that kind of attraction which makes the towel become wet with water, that the wick is made wet with tallow. We know how a towel left carelessly with one end in the basin will draw the water out on to the floor, acting like a siphon. If the tail of a prawn, after pulling off the fan part, be placed in a tumbler of water and the head be allowed to hang over the outside, the water will be sucked up by the tail by capillary attraction, and will continue to run out through the head until the water in the glass has sunk so low that the tail ceases to dip into it. In like manner the particles of melted tallow ascend the cotton of the wick and get to the top ; other particles then follow by their mutual attraction for each other, and as they reach the flame they are gradually burned.

The only reason why the candle does not burn all down the side of the wick is that the melted tallow extinguishes the flame. You know that a candle, if turned upside down, so as to allow the fuel to run upon the wick, will be put out. The reason is, that the flame has not had time to make the fuel hot enough to burn, as it does above where it is carried in small quantities

into the wick, and has all the effect of the heat exercised upon it.

There is another condition which you must learn as regards the candle, and that is the vaporous condition of the fuel. If you blow a candle out cleverly, you will see the vapour rise from it. You have often smelt the vapour of a blown-out candle—and a very bad smell it is ; but if you blow it out cleverly, you will be able to see pretty well the vapour into which the solid matter of the candle is transformed. I will blow out one of these candles in such a way as not to disturb the air around it, by the continuing action of my breath ; and now, if I hold a lighted taper two or three inches from the wick, you will observe a train of fire going through the air till it reaches the candle. I am obliged to be quick and ready, because if I allow the vapour time to cool, it becomes condensed into a liquid or solid, or the stream of combustible matter gets disturbed.

The heat that is in the flame of a candle breaks up the vapour of the wax, and sets free the carbon particles ; they rise up heated and glowing, and as they are burnt they pass off into the air as a perfectly invisible substance.

MICHAEL FARADAY.

## SODA-WATER

WHEN you are hot and tired from a long walk you naturally drop into the nearest drug-store and take a seat on the wire-legged stool before the marble monument and say to the young man in the apron, ' Plain soda, please.' Natural enough it is. But funny when you think of it. For what you are paying for is the very thing that you are most anxious to get rid of. What you suck in through

the straw is just what you expel with every panting breath.

For soda-water does not contain soda. This is one of these misbrandings that the law allows because it can't stop its use. It is a hang-over word, like 'sardines' that never saw Sardinia and 'bologna' that does not come from Italy.

Soda-water used to be made from baking-soda by the action of some acid that releases the desired gas. Then limestone was substituted for soda because it was cheaper and just as good. But the thirst of young America seemed likely to melt away mountains of marble, and so it is now customary to catch and compress the gas that escapes from soda-springs or from the fermenting vats of beer or near-beer or from the combustion of coal. What soda-water is composed of you may see for yourself if you watch your glass as it stands on the table after you have slaked your first thirst. You will see that it is separating into two different things, a liquid and a gas. The liquid is plain water, as you will find out if you are too slow about drinking. The other is a heavy gas that slips up through the water in little bubbles and collects in the empty half of the tumbler. This gas is as invisible as air, but you can prove that it is not air by striking one of the matches on the table before you and plunging it into the upper part of the glass. You will see that the light will be put out before it reaches the water. The gas is so heavy that you can fairly drink it from the glass, and it has, as you know, a tingle-tangle taste. It is also slightly sour, or, as the chemist would call it, a weak acid. 'Carbonic acid' is the old name for it, but it is more correct to name it, when it is out of the water, 'carbon dioxide.'

Into these two things then, water and carbon dioxide, your plain soda dissolves before your eyes. The remarkable thing about it is that all living beings are dissolving into these same two things, also before your eyes, though you do not see it.

Every plant from the yeast to the pine, every animal from a midge to a man, is continually being converted into water and carbon dioxide and passing off in a gaseous form.

While you are musing over it, your glass of soda-water is slowly evaporating. So are you. And into the same elements. You can prove this without leaving your chair. Wipe one side of the tumbler dry with your paper napkin and breathe against the cold glass. There is the dew into which you are dissolving.

The other product of your internal combustion, carbon dioxide, you can identify if you will ask the clerk in the chemist's shop to pour you out a glass of lime-water. Stick your straw into it, but blow instead of sucking. You will see the water turn milky—a common trick of the amateur magician and a proof of the presence of carbon dioxide. This white sediment is the same substance as the original limestone from which the carbon dioxide may have been derived.

You are therefore gradually becoming gasified, and the end-products of your life-reaction are water and carbon dioxide. We may measure your vitality by weighing these products of your activity. If you are leading the sedentary life, your output of soda-water will be low. If you are leading the strenuous life it will be high.

When you are working hard, say sawing wood or riding a bicycle uphill, you may be exhaling as much as five ounces of carbon dioxide in an hour. When you

are sitting still you are exhaling about an ounce. Food and fuel, the source of animate and inanimate energy, whatever runs our engines or our bodies, all turn out as soda-water in the end. The furnace cannot consume its own smoke in the place of fresh fuel. We must turn over this useless product, soda-water, to the green leaves ; for they, under the stimulus of sunshine, have the power to reverse this reaction, to release the oxygen again to the air, and to store up the carbon and hydrogen as food or fuel. In this form they are once more at the disposal of man to furnish him strength to do his work.

So that Yankee ingenuity has converted this waste product of all life into a re-invigorator.

This glass of plain soda is not so plain as it seems at first sight. There is more to be got out of it than the man at the fountain put into it.

Why does the gas escape from the liquid ? Because the liquid has more gas than it has a legal right to hold. There are two laws regulating this matter. One says that the higher the temperature the less the gas that can be dissolved in a liquid. Your glass of water can hold easily two glassfuls of carbon dioxide when it is ice-cold, but only one glassful at the temperature of the room. Since the soda-water as it stands is warming, it must give off half of its gas.

The other law is that the greater the pressure the more gas will be dissolved in a given quantity of water. Under ordinary conditions a pint of water will hold about a pint of gas. Making the pressure four times as great, it will dissolve four pints. The reason why soda-water is so nice is because you get more for your money than you think you are getting. If you pay a nickel for a pint you get five pints of fluid—only a cent a pint.

It is consequently very filling and satisfying to the thirsty soul, who, like all human beings, wants so much more than he can hold.

The imprisoned gas, when the pressure is removed by the pulling of a cork or the running from the fountain, tries to escape, and it is very interesting to watch its struggles in your glass. The gas that is dissolved in the water at the surface can go right off into the air, but that which is down deeper has a harder time. The little individual bubbles clinging to the side and bottom are too weak individually to push their way through the water to the top. Then the era of combination begins. Several little bubbles join together and form a syndicate. This draws to it all the little bubbles near it and absorbs them. Some of the bubbles you will see trying to preserve a quasi-independence as they cling together, but the filmy partition finally breaks. The trust is formed and soars upward, growing as it goes. There are two reasons why it gets bigger as it rises through the water : one is that the pressure gets less, as with a balloon in the air, and the other is that the gas in the water through which it passes can escape into it as easily as from the surface above.

‘Unto him that hath shall be given,’ is also a physical law. As the bubble gets bigger the pressure holding it gets weaker, just as when you blow up a circus balloon or one of those inflating squawkers that the children have. You have to blow hard at first, but as the rubber film expands it becomes weaker, and you have to look out or you will burst it with your breath. Now, the bubble of gas in the water is held together by just such an elastic film. You used to call this force ‘capillary attraction,’ but you must say ‘surface tension’ or

' interfacial energy ' nowadays, or else your children will laugh at you.

As the bubbles get bigger, then, the surface tension gets weaker, because it is less arched. It is a poor rule that will not work both ways. All scientific laws should be good rules. Conversely, then, let us say, that the smaller the bubble the greater the force necessary to expand it. That is all right for a way, but if you work it back mathematically to its extreme limit you will reach the absurd conclusion that no bubble can have ever been begun. Or to put it in another way, if the bubble is next to nothing in size it will be next to impossible to start it. The scientists, however, are not at all embarrassed by such a reduction to absurdity. If a law does not go their way they part company with it without a pang. In this case they simply say the rule does not apply to infinitesimal bubbles, which is obviously true.

But you can see for yourself that, even if it is not impossible, it is very difficult for a bubble to get a start in life. The bubbles begin on the sides and bottom of the glass where there is some little irregularity in the surface to give them a chance. If there is a little scratch made by careless scouring of the glass you will find them lined up along that. A glass with a perfectly smooth, even surface will retain the gas much longer. Champagne glasses have a deep hollow stem from which the bubbles stream up for a long time, so that the liquor will keep ' alive ' longer. Stir your soda with a straw and see the bubbles rise.

If you don't want the big trust bubbles to rise to the top and escape with their accumulations, thicken the water with some sugar syrup from the other faucet of the fountain, and then the bubbles will accumulate



on top in a rosy mass of foam and froth, very pretty, but not good for anything.

But this philosophising makes one thirsty. Our soda-water is getting stale from standing. All the life is going into the foam. Blow it off and drink.

EDWIN E. SLOSSON, *Chats on Science.*

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## ICEBERGS

So abundant and marvellously fresh are the traces of the vanished glaciers in many Highland glens that no great exercise of the imagination is needed to bring back the snow-fields in the mountain basins, to fill the corries with snow and ice, and to follow the glacier as it bears downwards its heaps of moraines. If by chance we can visit such a scene in winter, when the heights are white, and thick drifts of snow have buried the upper part of the glen, the past stands out once more before our eyes. We seem to see

· The glaciers creep

Like snakes that watch their prey, from their far  
fountains,

Slow rolling on ; there many a precipice

Frost and the sun in scorn of mortal power  
Have piled—dome, pyramid, and pinnacle,

A city of death, distinct with many a tower  
And wall impregnable of beaming ice.

Yet not a city, but a flood of ruin

. Is there, that from the boundary of the skies

Rolls its perpetual stream, vast pines are strewing  
Its destined path, or in the mangled soil

Branchless and shattered stand ; the rocks, drawn down  
From yon remotest waste, have overthrown  
The limits of the dead and living world,  
Never to be reclaimed.

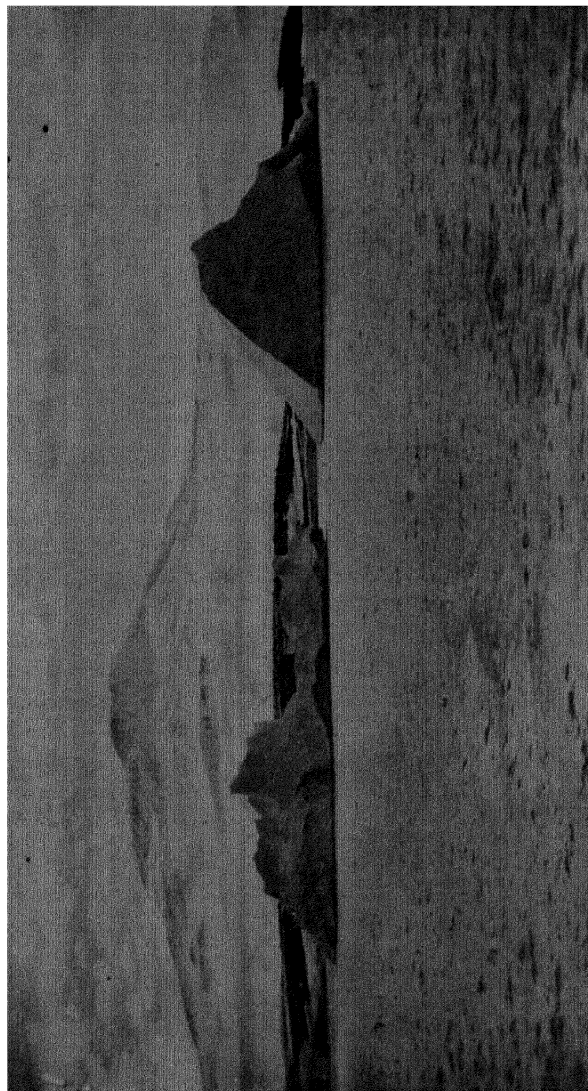
Below, vast caves

Shine in the rushing torrents' restless gleam,  
Which, from those secret chasms in tumult welling,  
Meet in the Vale ; and one majestic River  
The breath and blood of distant lands, for ever  
Rolls its loud waters to the ocean waves.' <sup>1</sup>

While land-ice is a most powerful geological agent in new-modelling the surface of the earth, its operations are not entirely confined to the dry land. Where it descends into the sea, it may creep along the sea-bottom for some distance from land, until flotation comes into play, when large masses break off from the ice-cliff, and rising up and floating, sail away seaward as icebergs. These ice-islands carry with them any soil or rock rubbish which may have fallen upon them from inland cliffs, while they formed part of the ice-sheet of the country. The debris so borne off is, of course, thrown down upon the sea-bottom, as each berg melts away after a voyage of perhaps hundreds of miles. Year by year, whole fleets of these bergs are sent southwards in the arctic regions, so that the bed of the northern seas must be strewn with earth and boulders. As only between an eighth and a ninth part of a mass of ice appears above the sea-water on which it floats, the bulk of many bergs must be enormous. One rising 200 feet above the waves—not an uncommon height—must have its bottom more than 1700 feet below them, and the thickness of the arctic ice-cap at its outer edge must be about 2000 feet. The antarctic ice-sheets and icebergs are of still more colossal dimensions.

Deeply seated in the water, bergs are acted on much more by marine currents than by winds. Hence, they

<sup>1</sup> Shelley, *Poems of 1816*, 'Mont Blanc.'



ICEBERGS OF THE SOUTHERN SEAS

are sometimes seen careering through a frozen sea in the teeth of a tempest, breaking up the thick ribbed ice before them with a noise like the loudest thunder, yet with as much apparent ease as a ploughshare cuts the loam. Every winter, crowds of bergs are firmly fixed in the frozen sea of the arctic regions, and when summer comes the united mass drifts southwards towards Newfoundland. Vast floes of ice, larger sometimes than the whole of Scotland, with embedded ice-hills rising 200 feet or more above the sea level and sinking 1700 feet or more below it, are thus borne by the ocean currents into warmer latitudes, where they break up and disappear. When such current-driven masses grate or strand on the sea-bottom, they no doubt tear up the ooze, and bruise and scratch the rocks. In the course of long ages, a submerged hill or ridge may have its crest and sides much bruised, shorn, and striated, and the sea-bed generally may be similarly grooved and polished, the direction of the striation being more or less north and south according to the prevalent trend of the drifting ice. In some of the younger deposits of Scotland, there are indications that the lower parts of the country were submerged in an icy sea across which floes and bergs drifted to and fro. There can be no doubt, however, that the general smoothing and striation of the surface of the country has been the work of land-ice and not of icebergs.

SIR ARCHIBALD GEIKIE, *Scenery of Scotland.*

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